83

MEDICAL RECORD

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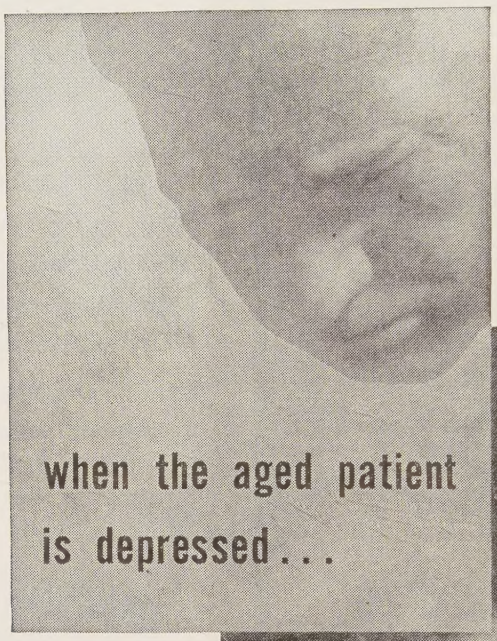

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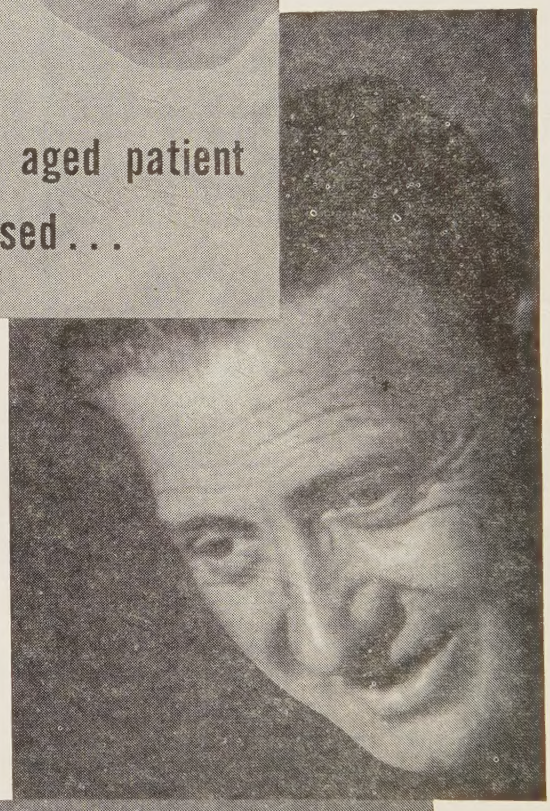

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OPEN FORUM 70

EDITORIALS 103

PAPERS AND ADDRESSES

Some Medical Uses of Vitamin E
Arthur Vogelsang, M. D., Evan Shute, M. D. and Wilfred Shute, M. D., London, Guelph, Ontario, Canada 83

Novocain Intravenously in Treatment of Delayed Serum Sickness and in Aphylactic Manifestations Due to Food from Known and Unknown Causes
Lt. Col. Athanasios Krontiris, M. D. and Capt. Per L. Koulouris, M. D., Athens, Greece 89

Aural Electrophoresis of Prostigmin
E. Neuwirth, M. D., New York, N. Y. 92

Pathogenesis and Specific Therapy of Agranulocytosis
Joseph H. Isenstead, M. D., Sharon Springs, N. Y. 94

Differential Diagnosis and Treatment of Paranasal Sinusitis
William L. Rhodes, M. D., F. I. C. S., Corpus Christi, Tex. 98

The Chronic Running Earn and Its Cure
Irving Wilson Voorhees, M. D., New York, N. Y. 100

SPECIAL ARTICLES

Letter from Britain
(From Our Own Correspondent) 113

New Sources of Protein
T. Swann Harding, Falls Church, Va. 70

David Hosack, M. D. (1769-1835)
Herman Goodman, M. D., New York, N. Y. 107

SURGICAL DIGEST
Richard A. Leonardo, M. D., Rochester, N. Y. 117

NEWS ITEMS 110

BOOK REVIEWS 114

CRITIQUE 78

MEDICOLEGAL NOTES 118

NEW PRODUCTS 126

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WHOLE No, 2781

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Yale Professor Promotes New Measuring Stick For Vitamin Necessity

Dr. Willard A. Krehl, assistant professor of nutrition, Yale School of Medicine, reported to the Nutrition Symposium at the Columbia University School of Public Health, that the research he has conducted shows the necessity of relating vitamin needs to other bodily requirements for fat, carbohydrates and protein.

This new type of research at Yale is expected to provide a yardstick for assessing the role, in human nutrition of many of the vitamins known to exist. "Only recently," Dr. Krehl declared, "has our knowledge of vitamins been sufficiently extended to permit such a process."

The Yale research showed for the first time that vitamin A deficiency has an extremely close relationship to vitamin C. Vitamin A, the so-called growth vitamin, is found in liver, butter and eggs and vitamin C, is of course found in citrus fruits.

The synthesis of vitamin C is impaired by the vitamin A deficiency induced in Yale experiments with rats. It is believed that this finding has possible significance in human nutrition because those diets which would normally produce a vitamin A deficiency are also lacking in the foods which contain vitamin C.

Dr. Krehl further revealed that he and his associates learned that the vitamin A requirement for nutrition bears no direct relationship to how heavy an animal might be, in contradiction to previous belief. The need for this vitamin is related specifically to the level of fat and protein in a diet as such to the composition of the diet.

In studying nicotinic acid, the Yale School of Medicine investigators altered the level of protein to find out if it increased or decreased vitamin A requirements.

They found out that the need for nicotinic acid decreased as the protein level of the diet was raised providing that the protein added contained tryptophane.

The possibility that symptoms of pellagra would appear more rapidly was demonstrated when a protein like gelatin was added to the diet since gelatin contains no tryptophane. An unbalanced situation among the amino acids took place and the need for nicotinic acid was increased markedly.

Dr. Krehl said in conclusion, "While these studies seem to indicate some futility in trying to establish precise figures for the animal's vitamin requirement, one must not neglect the great importance of having such figures for use as an adequate yardstick for measuring and defining the zone of optimum nutrition, the ultimate goal of the nutritional biochemist."

Dr. Krehl conducted these studies with the assistance of Jean Mayer and Dr. Alberto Carvalho, Rockefeller Fellows from France and Brazil respectively.

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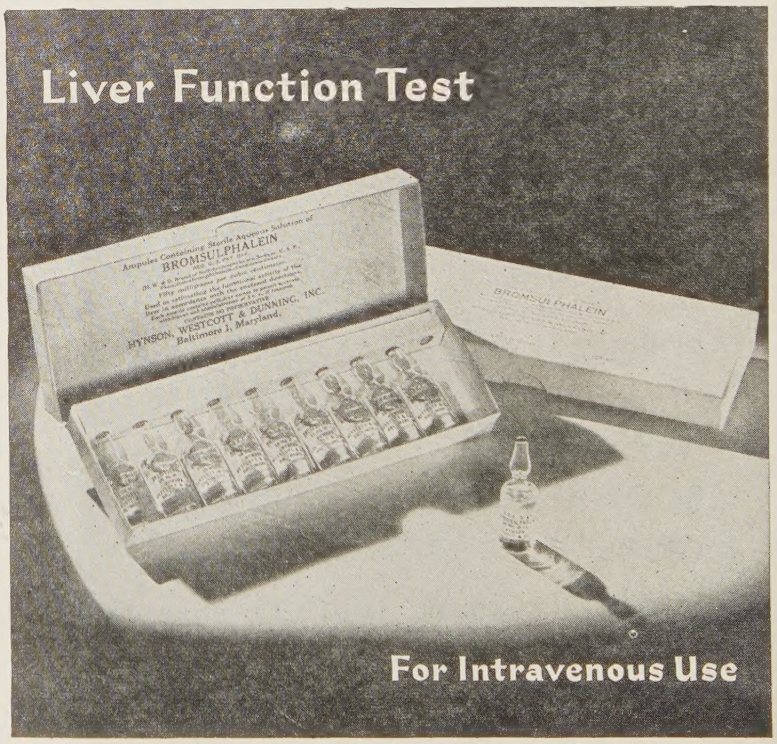

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Open Forum

NEW SOURCES OF PROTEIN

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Viewed globally, and every food problem is now a world problem, the human diet is well overweighted towards carbohydrates and calories. Protein of high biological quality remains supremely important, yet it is the most expensive and least accessible to the poor of all the common dietary elements. What better scheme then, than to try to use some of the excess carbohydrate to make proteins?

This very thing occurred to the beleaguered Germans during the second global war. One great trouble with warm-blooded animals is their curious inability to use nitrogen directly as food. Before animals can be nourished by it this substance must occur in a form at least as complex as the twenty-two amino acids from various chain combinations of which the innumerable animal and plant proteins are produced. Generally human beings break down proteins like steak or egg into their constituent amino acids, and then rebuild proteins used by the body.

It is quite true to hold that all flesh is grass because all animal life on the globe depends on plant life in last analysis, which in turn depends on sunshine and chlorophyll. This green constituent of leaves has just been found to have the property of phosphorescence which enables it to retain sunlight locked in for a brief period, perhaps a tenth of a second, during which imprisonment it can produce carbohydrates from the carbon dioxide of the air. Animals eat the green plants, which also manufacture proteins from the nitrogen of the air—with the aid of soil organisms—and, in turn, produce proteins for human food, as well as for their own well-being.

Simple chains of amino acids have been put together in the laboratory to form precursors of proteins but nothing so complex as a true animal protein has been arrived at synthetically. Moreover this process of fabricating beefsteaks would be inordinately expensive even if fully developed.

During the war the Germans managed to make their livestock eat a relatively simple nitrogen compound, the white powder, urea. That worked. The cows did quite well with this to replace part of their feed protein, and the method has been used here also. In addition, the Germans began to develop synthetic protein feeds for cattle, using cheap carbohydrates, yeast, and synthetic nitrogen.

Yeast itself is an excellent food because it contains protein of high quality biologically. The yeast cells contained in brewers' grains and in distillery slop have long made a distinct contribution to poultry and hog feed in this country. We normally produce over 30 million pounds of brewers' yeast annually. However, we normally recover only about 8 million pounds of this for use in livestock feeds, while half as much again, after debittering, is used in pharmaceuticals and for human food. Thus, even during periods of meat scarcity we are in the habit of throwing away some twenty million pounds of excellent protein food in the form of edible yeast.

After it was discovered what the Germans had been doing there was an outbreak of newspaper publicity here about making "yeast-steaks." Moreover, it is quite possible to produce high-grade, thoroughly palatable protein foods without setting hand to the plow or feeding or caring for either livestock or poultry. A batch of molasses, ammonia, water, air, and yeast can be transformed into high-quality protein at relatively low cost.

Because of their high price, there has always been a world scarcity of high-protein foods like meat, milk, cheese, and eggs. Yet we have long wasted far too much yeast, wheat germ, skim milk, and other fine proteins. Yeast is not only a valuable food per se but it can be utilized to produce protein cheaply from the world excess of carbohydrates. In other words the principal nutritive element of a good steak could be prepared from sawdust. Given a little time it could even be flavored to taste like beef, or lamb, or chicken, or cheese.

When treated under pressure and at fairly high temperatures with sulfuric acid, waste shavings, sawdust, or chips will yield a fairly simple 6-carbon sugar, glucose or dextrose, and a ton of wood will produce 1,000 pounds of it. By adding either ammonium sulfate or urea, and superphosphate to the hydrolysate, 500 pounds of yeast can be grown on the sugar while alcoholic fermentation is inhibited. One-half of yeast is good protein, richer in vitamins than most meats.

When yeast is combined with cereal grains, an excellent livestock feed results. But yeast is just as desirable for human food. Meanwhile the process mentioned in the previous paragraph also yields 500-600 pounds of a clean, brown powder, lignin, and 250 pounds of the 5-carbon sugar, xylose. Both would assume great industrial importance if produced cheaply and abundantly.

Furthermore scientists are hybridizing yeasts to develop better flavor, increased protein content, greater growing power, and improved palatability. In time the study of yeasts and molds may revolutionize agriculture, moving a large part of the food-production industry from the soil into city factories. Here yeast will be grown in huge vats of molasses or other carbohydrates, ammonia gas, water, and air.

Vegetable sausage has been made from wood by such methods. Yeast extracts have also been used successfully to enrich meat and spaghetti sauces, vegetable dishes, macaroni, biscuits, soups, and gravies. Waste-product yeast contains more than 4,500 calories per milogram, in addition to its pound of fine protein. The vegetable sausage so far produced resembles liverwurst in both odor and taste; it contains 80 percent dried yeast, 10 percent soya

flour, and 10 percent flavoring. Flavors can be synthesized almost at will these days.

This laboratory method of food production is highly adaptable to crowded regions of the world. Plant breeders must continue their good work, of course, because sugar and molasses must be obtained from the vegetable world until science has mastered nature's photosynthesis process.

Moreover it is possible to imagine this process going even further. After all a synthetic potato can be made when science learns to substitute one form of energy, electricity, for another, sunlight. Then the basic constituents of potato starch—carbon, hydrogen, and oxygen—could be caused to combine electrically. The formation of starch is basically a mere building up and storing of energy, and scientists have already been able to synthesize starch compounds electrically. Once this process is further perfected we may be largely divorced from the sun and the steer.

Synthetic carbohydrates when manufactured can also become food for yeast and molds which would in turn produce highly palatable proteins of good quality. Meanwhile, though the slaughterhouse and the butcher shop may be on the way out they are not obsolete yet.

Granite Gables

NYU Rehabilitation Unit Occupies Interim Quarters

The Institute of Rehabilitation, one of the principal units of the proposed New York University-Bellevue Medical Center, has established interim quarters at 325-327 East 38 Street, thanks to the generosity of the Milbank Memorial Fund, coupled with a $25,000 gift from Bernard Baruch.

The Institute, which offers rehabilitation training to crippled and disabled persons not otherwise provided for, plans to receive patients as soon as necessary changes are made in the new quarters.

A campaign for $2,500,000 to build a permanent home for the Institute of Rehabilitation, which will take patients "from the bed to the job," is part of a current appeal for $15,575,000 for a new University section of the New York University-Bellevue Medical Center.

Dr. Howard A. Rusk, chairman of the Department of Rehabilitation, said that thirty-six dormitory patients at any one time and 150 out-patients a day will be treated in the interim Institute. The doctor said, "All but the indigent sick of New York City, now cared for in rehabilitation wards at Bellevue Hospital, will be eligible."

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First Industrial Conference on Alcoholism Scheduled in Chicago

The first Industrial Conference on Alcoholism will be held in the Morrison Hotel, Chicago, March 15, as announced by Dr. Anton J. Carlson, The University of Chicago, chairman, and James H. Oughton, Jr., director of the Keeley Institute, Dwight, Ill., co-chairman.

Sponsored by the Chicago Committee on Alcoholism, the Conference has been designed to bring to the attention of industrial leaders throughout the country facts pertaining to the problem of alcoholic employees and to discuss ways and means of overcoming the problem.

"Alcoholic employees now cost industry almost one billion dollars per year, according to one estimate," Dr. Carlson said. "In most cases, when an employe is found to have alcoholic tendencies, he or she is usually fired. What industry does not realize is that they have invested time and money in these employees and that it is not necessary to fire them. If proper measures are taken, most of them can be rehabilitated and when this is accomplished, they make the best possible type of employe."

On the calendar for the morning session meeting is the discussion centering around "The Problem." Alcoholic definitions such as "What and who is an alcoholic" and the physiological and psychological aspects will be covered by one speaker. A second speaker will discuss "Alcoholism as a community problem," setting forth the social aspects, relationship of problems of alcoholism to family and community life. The role of public institutions, such as courts, hospitals, welfare agencies, jails, etc., will be reviewed briefly.

The afternoon session will cover the subject of "What to do about the problem."

Four speakers will discuss "What can be done for the individual alcoholic." Various types of individual treatment will be covered; the work of the Yale School of Alcohol Studies, the Keeley Institute treatment, and various types of rehabilitation centers will be outlined. The Alcoholics Anonymous program will also be covered.

The final subject "Responsibility for alleviation and prevention" will be covered by two speakers. One will talk on industry's part in the problem; the other on industry and the community.

Speakers will be prominent medical authorities who have specialized in the disease of alcoholism, and outstanding industry representatives who are conscious of the problem.

Reservations for attending the technical sessions and the luncheon may be made by writing Walter O. Cromwell, vice president, Chicago Committee on Alcoholism, 816 South Halsted Street, Chicago.

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Requests from a number of physicians have prompted the offering of this special course in an effort to acquaint them with the technical knowledge, enabling them to apply the promising possibilities for the diagnosis of the very early curable cancer lesion.

A number of the fascinating new developments of research in cytology are featured in color photomicrography and in motion picture presentations.

Further details may be obtained from Doctor Ayre, Royal Victoria Hospital, McGill University, Montreal, Canada.

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Personals

The appointments of *Dr. C. Paul Hegarty* as director of antibiotic research and *Dr. L. D. Wright* as director of nutritional research were announced by Dr. L. Earle Arnow, director of research, Sharp & Dohme, Inc., Philadelphia.

Dr. Hegarty, formerly a research associate in the department of bacteriology, has been with the company since 1944. From 1938 to 1940 he was an instructor in bacterial physiology, Oregon State College and served the following four years at Georgetown University School of Medicine as assistant professor of bacteriology.

Dr. Wright served as graduate assistant in physiological chemistry at Pennsylvania State College from 1936 to 1937, and during the next three years he was assistant nutrition chemist at the Oregon Experiment Station, while working on his Ph.D. at Oregon State College.

He became affiliated with Sharp & Dohme in 1942 as research associate in the department of pharmacology.

Dr. Grover F. Powers, chairman of the department of pediatrics, Yale School of Medicine, was honored by the American Academy of Pediatrics with the Borden Award, granted for "outstanding research in the nutrition of infants and children."

Dr. Powers in his acceptance speech, declared that a diet containing cow's milk and other added substances is more satisfactory for feeble, malnourished, convalescent and premature infants than human milk. This finding is substantiated on twenty years' experience at the New Haven Hospital, now the Grace-New Haven Community Hospital, of which Dr. Powers is the pediatrician-in-chief.

The Borden Awards, established in 1936 in recognition of outstanding research achievements in the food industry and related fields, are administered by seven professional and scientific associations.

Dr. Nathan Anthony Womack, one of the founding members of the American Board of Surgery, has been selected to head the department of surgery in the college of medicine at the University of Iowa. He is now professor of clinical surgery and surgeon to out-patient clinics at Washington University and associate surgeon at Barnes General, St. Louis Children's and St. Louis Maternity hospitals in St. Louis, Mo.

Dr. Womack, whose appointment was approved by Iowa State Board of Education at a recent meeting, assumes his new position on or before July 1, 1948. He is an internationally recognized clinical surgeon and surgical pathologist.

In the establishment of the Women's Medical Specialist Corps authorized by Congress as a part of the medical department of the Regular Army, the Surgeon General has announced the appointment of *Major Emma E. Vogel* as chief of the new organization, with the rank of full colonel.

Colonel Vogel will assume supervision of the dietitian section, the physical therapist section and the occupational therapist section, which will be grouped into one all inclusive department.

At the annual meeting of the State Medical Society of Wisconsin, in Milwaukee, *Dr. William D. Stovall,* became president and *Dr. Karl H. Doege,* was chosen president-elect.

Dr. Charles F. Obermann, superintendent of the Cherokee State Mental Hospital, Cherokee, since 1936, has been recently appointed mental health director for the state of Oklahoma.

Robert E. Bannon, formerly on the staff of the Dartmouth Eye Institute, has been appointed to the faculty of Columbia University where he will teach and do research. He has also accepted a position as research editor for the *American Journal of Optometry* and *Archives of the American Academy of Optometry.*

The Association of Private Hospitals, Inc., 1440 Broadway, New York City, at its 97th regular meeting elected *Dr. E. John Dolan, F. A. C. S.,* to serve as president for 1948. *Dr. Will I. Henderson,* was chosen vice-president.

Mark R. Everett, Ph. D., has been named temporary dean of The School of Medicine, of the University of Oklahoma, Oklahoma City. He is chairman of the department of biochemistry.

The Oxford University Weldon Prize for Research in Mendelian Heredity and Evolution, was awarded to *Sewall Wright, Sc. D.,* University of Chicago zoologist. This prize, presented every three years for publication of the most outstanding contribution to biometric science, is a bronze medal and $360.

Byron Thompson, president of Byron Thompson & Company, Jacksonville, recently was appointed distributor for x-ray apparatus manufactured by North American Philips Company, Inc., New York.

* * *

Linked with Willan is the name of his friend and pupil, Bateman, for whom *Bateman's disease,* or Molluscum contagioum, is named. Thomas Bateman was born in England in 1778. His thesis was on the subject of the hemorrhages of peticheal type. Other diseases known as Bateman's disease are: Purpura senilis, alopecia areata; ecthyma; herpes iris, and lichen urticatus. Bateman knew cheilitis exfoliativa as Psoriasis labialis. Bateman was a worthy successor to Willan, and not only completed and amplified the teachings of the senior, but published his writings.

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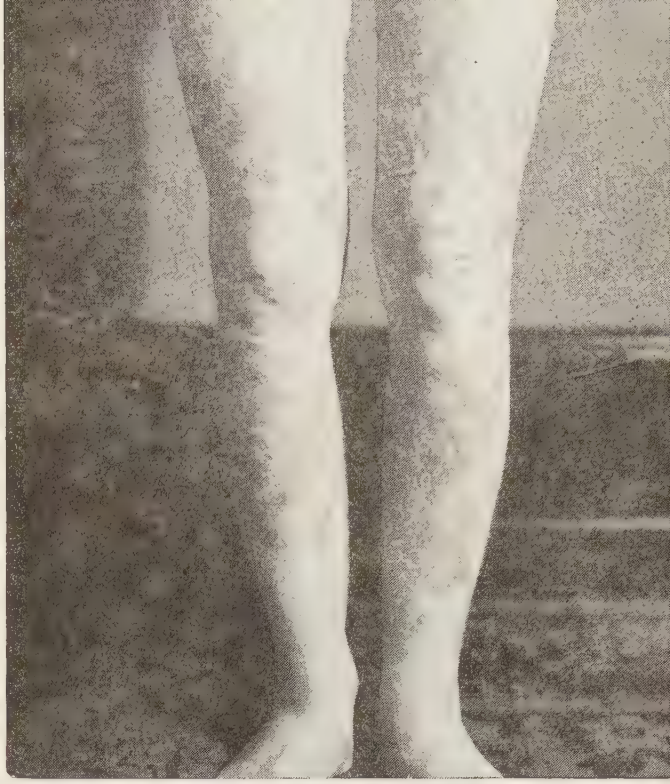

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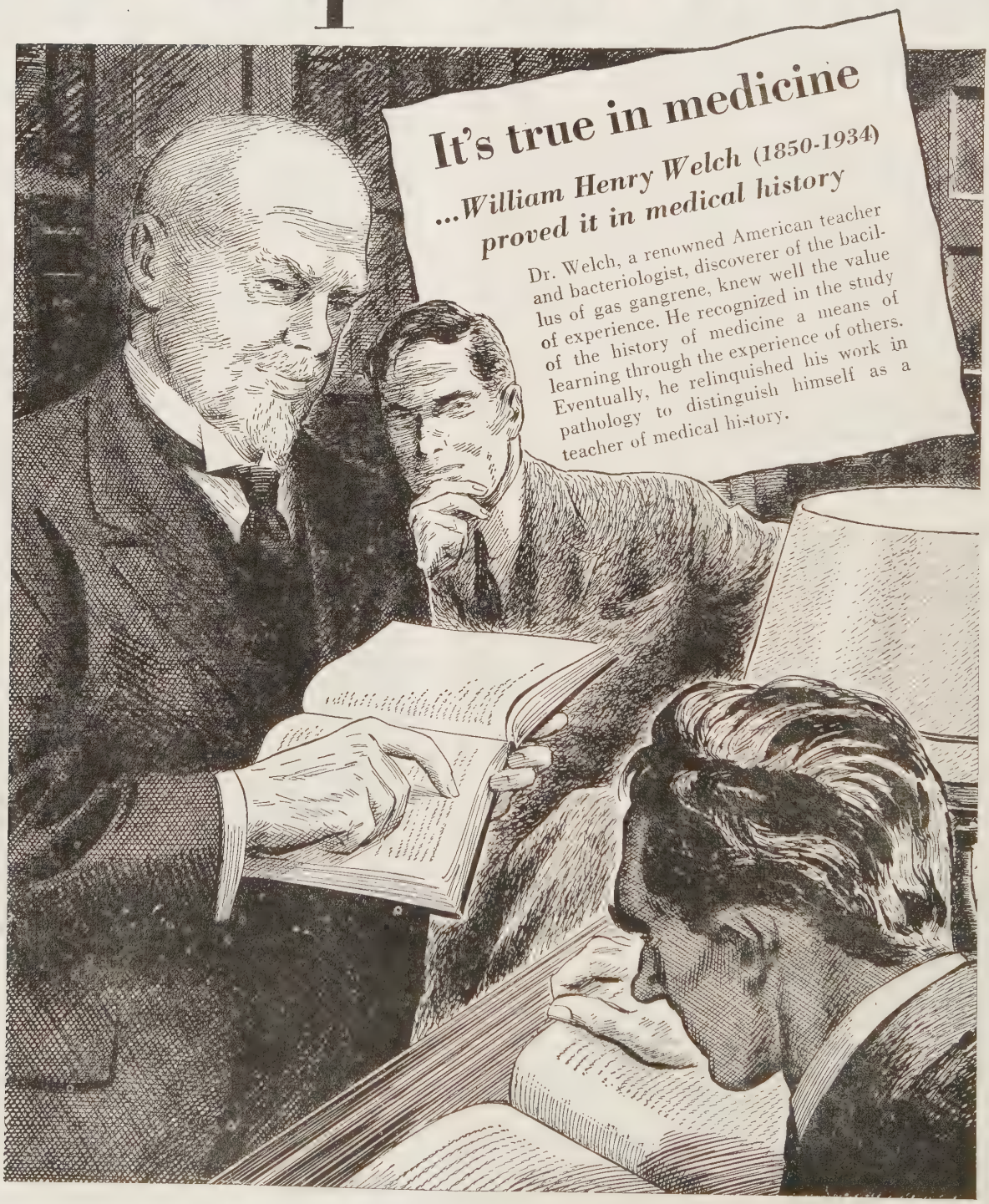
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Dr. Welch, a renowned American teacher and bacteriologist, discoverer of the bacillus of gas gangrene, knew well the value of experience. He recognized in the study of the history of medicine a means of learning through the experience of others. Eventually, he relinquished his work in pathology to distinguish himself as a teacher of medical history.

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Critique

Silk and Wool are proteins: But they are unlikely to replace meat in the diet, because they are lacking in too many essential amino acids. Silk, in fact, is mainly composed of glycine and alanine, plus a little serine and tyrosine, small amino acids with small molecules which make a threadlike structure. Wool contains a greater variety of amino acids; its molecules are tied together with cystine and tend to be a little pudgy or bunchy. Collagen and most edible proteins are made up of a wide variety of amino acids and their molecules are globular. One of the most difficult jobs in making artificial protein fibers, as from the casein in milk, is to stretch out these globular molecules and give them a fibrous structure which will remain stable and maintain strength. This job is still unfinished.

Organic chemistry and biology: The contributions of Scheele (1742-1786) to organic chemistry were almost as important as his discovery of oxygen, and he was also a pharmacist. He obtained tartaric acid in 1769 and, later, benzoic acid by boiling gum benzoin with lime. He first prepared lactic acid from sour milk and mucic acid from lactose. When mucic was later obtained independently from gum tragacanth it became evident that the same chemical substance could be produced from both animal and vegetable sources. Scheele also obtained malic, citric, and gallic acids by crystallizing them from solutions; he discovered uric acid, glycerol, and hydrocyanic acid. Braconnet discovered salicin and obtained glucose from cellulose prepared from linen. The German pharmacist Kirchoff, in 1811, had shown that glucose could be obtained from starch. In 1833, Payen and Persoz discovered the first enzyme—diastase—and, in 1827, the medical practitioner Prout, in London, said there were just three classes of elementary substances—"the saccharine, the oily, and the albuminous." Gay-Lussac established the fundamental equation for the fermentation of glucose into carbon dioxide and ethyl alcohol. Wöhler, in 1824, obtained oxalic acid from cyanogen and, in 1828, synthesized urea, though the latter synthesis by no means immediately upset the doctrine of vitalism and changed the minds of chemists on the subject as is so commonly thought. The synthesis of oxalic was the first one of a vital product from a nonvital, if we except the production by Scheele of cyanides from carbon, potassium carbonate, and ammonium chloride. Many separate investigations of many kinds supported the Wöhler synthesis and only very gradually broke down the strong supports of the doctrine of vitamism to which the more distinguished scientists of the day subscribed until their death.

New antibiotic: James F. Couch, the rutin man at the Department of Agriculture's Eastern Regional Research Laboratory, and associates, announce the finding that quercetin, from black oak bark, has remarkable antibiotic properties, on the acid side of neutral, which grow negligible on the alkaline side or in the presence of serum or iron. Quercitin may be prepared by hydrolysis with acid of quercitron, the yellow coloring matter in black oak tanbark; rutin also yields it on acid hydrolysis.

Phantom ills: During 1929 the "Occasional Correspondent" of the British *Lancet* for the United States, visited the clinic of Dr. J. B. Carnett, professor of surgery, University of Pennsylvania, and found there numerous patients who had lost their appendix without gaining any lasting relief from their preoperative symptoms. Dr. Carnett had long held that there were cutaneous areas of hyperaesthesia which were related to visceral disease, that chronic appendicitis was nonexistent, and that parietal tenderness is due to parietal neuralgia but causes hundreds of unnecessary operations. If it occurs in the upper right quadrant the patient gets his gallbladder removed; if in the lower right the patient loses appendix, ovaries, and/or tubes, depending on sex and how the surgeon feels. Dr. Carnett, however, could distinguish by tests he had developed between parietal tenderness and real pathology.

Environment and food intake: The Harvard Fatigue Laboratory, by studying the diets voluntarily chosen by members of the armed forces in localities of widely diversified climates, has found that human beings choose to eat just about the same percentage of proteins in their diets whether they are in the Arctic, the Tropics, or the Temperate Zone. The protein and fat intakes in the Tropics are high, by traditional criteria, but caloric intake varies from 3,300 average per day in the Tropics, through 3,850 in the Temperate Zone, to 4,400 in the Arctic.

Emotions tire There probably is no such thing as overwork. What tires is the tendency of the emotions to attain too high a tension. Sometimes that tension can be cracked by a cocktail or two, sometimes by a temporary change of occupation, but it should never be permitted to build up. Probably not one of us ever overworks either mentally or physically, but often we have not learned the trick of preventing our emotions from attaining high tension and they in turn fatigue the organs through which they express themselves. They also tempt us to further artificial stimulation and that can lead to actual organic disease. A strong emotion can effect physical injury as surely as a sharp knife.

The ailment called Love

Something like 17 years ago Dr. Paul Voivenel, a popular French writer who was also a trained psychiatrist, published a book called *La maladie de l'amour* which had a large sale. Therein love was studied as a disease, modern laboratory methods being used. Dr. Voivenel regarded love as a pathological nervous state but distinguished several forms of the disease, as did Stendahl. Platonic love, being purely cerebral was of an imaginative order and was confined to the neurosis. Physical love, however, originated in an excess of passionate folly and, in extreme forms, led to murder or suicide; this love is medullary in character. Standing between the two is conjugal love, least harmful of all because satiety readily leads to recovery! The sources of stimulation were said to be chiefly the eyes, though odor played a considerable part. The author concluded that the suppression of love might well be as prejudicial as its excess, but took a final stand in favor of morals and conjugal love.

Organizing research

There is much discussion of freedom in science these days and many scientists affect to believe that any scheme of reorganization which renders the process more efficient therefore deprives the scientist of his freedom and constitutes dictatorship or communism. Said the *British Medical Journal*, October 5, 1929, in this connection: "The methods of large-scale organization, so characteristic of the age we live in, may be seen operating in the field of scientific investigation as fully perhaps as in any other department of human activity.

"In this period, characterized by a developing collectivist ideology, scientific research, indeed, like art, would at first sight appear to be the last refuge of individualism. Yet there is a sense in which it is true that all scientific investigation is collective. The greatest individualist among scientific workers can build only on a foundation others have laid before him; through the medium of scientific journals and learned societies he must meet and receive stimulation from others engaged in work related to his own; in a thousand ways he must use knowledge which others have gained in the past or are at the moment collecting round him; and in the end his own contribution is but an installment which must be merged in the unending serial story of man's discovery of the universe.

"The scientist of popular imagination—the isolated individual ploughing his lonely furrow through an uncharted wilderness—has indeed his counterpart in reality. But his loneliness is an illusion; his wilderness is the meeting place of an international conference in perpetual session. There are, indeed, vital differences between collective research undertaken in this loose and undeliberate manner and collective research planned and organized by groups of

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scientists working in teams. In every new territory invaded by science the independent pioneer has blazed a trail along which others have had to follow. It would seem as though at every stage, as science makes its halting progress, there is a period, perhaps only a moment, when the direction of the next step is uncertain, when the difficulties are hardly realized, and the problems yet inadequately formulated.

"It is a period of reconnaissance, when only the loosest organization, giving the greatest scope for independence and originality, is likely to insure success. But after that, the more carefully planned and directed the advance the better. Independence and team work in scientific investigation are complementary to each other; both are necessary for the advancement of knowledge."

Maternal mortality: Henry Jellett, consulting obstetrician of the New Zealand Department of Health, wrote on Maternal Mortality and Training in Obstetrics, in *Medical Officer* (London) October 26, 1929. He observed that, while there was an average maternal mortality of 4.22 per thousand live births in Great Britain, Ireland, Australia, and New Zealand combined, the rate averaged only 2.53 in Holland and the Scandinavian countries. The definite cause was better education in obstetrics. In the latter countries midwives got 2 to 3 years training, in lieu of 1 to 1½; antenatal care and diagnosis were observed closely, the midwife was legally compelled to secure assistance whenever any abnormality turned up, and general practitioners could with the greatest ease secure the advice of specialists. Said he: "It is not difficult to see how great a benefit it would be to the medical profession to be freed from the irksome demands of labor. The advantages to the patient are obvious." He said medical practitioners usually tried to hasten labor too much and did not watch out for infections closely. He concluded: "The time is coming, if it has not already come, to consider the interests of the public and the medical profession will not be better served by handing over the management of normal labor to midwives. By so doing it may be possible to ensure that the wholly underpaid obstetrical work of the medical profession will, at any rate, be directed into channels in which it is essential to the exclusion of those in which it is not."

What's this: Here's the summary of an article in the *Lancet* (October 26, 1929) by Gladys A. Hartwell and V. H. Mottram: "The substitution of brown bread for white in a diet made up to approximate that of the Essex agricultural laborer, when fed in carefully controlled experiments, to the laboratory rat, resulted in but a small increase in growth and was accompanied by physical and nervous symptoms and by habits pointing toward a lack of, or imbalance between, feed factors in the brown bread diet. The experiments give but little support to the propaganda for brown bread."

Blind Indians: We often think of those respectable Reds, the aboriginal Indians of America, as sharp of vision, keen of hearing, and swift of foot. But many of them were stone deaf and blind! Some investigators said that small, hard, ivorylike tumors grew in their outer ear passages and prevented the entrance of sound waves. These osteomata were found in the ears of Indians from all over and only surgery would effect relief. Today such tumors are rare, many otologists never having encountered one.

Timely topic: Food is timely topic, what with our effort to send so much of it to aid Europe. Quite as timely is a talk given by Carl L. Alsberg, who was Doc Wiley's successor as Chief of the old Bureau of Chemistry which enforced the first Food and Drugs Act, before the American Academy of Political and Social Science, in 1924, on Scientific Food Consumption. Dr. Alsberg said, among other things: "A nation, then, might exist upon a diet on which it derived the greatest part of its energy from bread grains as wheat and rye, and a considerable part of its maintenance requirements from such animal foodstuffs as milk. In addition, the diet would have to contain a certain amount of green vegetables or fruits. It would also include the meat of veal and old cows, the eggs and meat of self-supporting, foraging hens, the product of sea and inland waters, the mutton which is a byproduct of wool growing, and the meat of animals like cattle and goats produced upon ranges and other rough lands. Obviously, such a diet can be produced with the minimum of labor and land. There is nothing on record to indicate that it is not wholesome. Its general adoption would release much labor and much land. If we assume that both would be applied to the production of wealth, it is clear that the resulting national gain in wealth might be very great indeed. In any event, the result might well be that the earth would support a far greater population than is commonly believed possible." But Dr. Alsberg did not for a moment think that the world would soon be sensible enough to adopt such methods of foiling the Malthusian doctrine. He was sure that psychological factors would effectually prevent the adoption of any such plan. But now would be a mighty good time to reconsider favorable evidence.

Epilepsy: What became of the method of controlling attacks of epilepsy by a diet rich in fats such as cream, butter, mayonnaise, bacon and oil, with a reduction in sugars and starches? The method was suggested in late 1929 by Dr. A. M. P. Saunders of Chicago State Hospital, who said that 32 out of 80 female epileptics had benefited from this diet. On this diet the fat was incompletely broken down in digestion and much acid was formed.

THE CRITIC

Army General Announces Changes In Graduate Professional Education Program

Major General Raymond W. Bliss, surgeon general of the Army, recently announced the following changes in the Army Medical Department graduate professional education program for this year, which is based on a thorough study of nine months operation of the program and surveys made by nine teams of civilian medical experts.

1. Graduate training in psychiatry will be strengthened and concentrated in three general hospitals, Letterman, San Francisco; Fitzsimons, Denver; Walter Reed, Washington, D. C.

2. Many qualified civilian consultants will be added to the attending staffs of the hospitals which are engaged in teaching. These will be distributed among the various special fields of medicine and surgery in which the Army is training residents and interns.

3. The administrative responsibilities of qualified teachers will be lessened by the transfer of routine paper work to administrative assistants assigned from the Medical Service Corps.

4. Special instruction in the best methods of medical education is being provided for key military instructor personnel by means of short courses at selected civilian medical teaching institutions.

5. The number of conferences at which attendance by all residents and interns is required is being reduced.

6. The actual content of the program of instruction for each special field will be more detailed. Portions of the program will be delegated to the military or civilian instructor who is best qualified in each particular phase, so that accurate coverage will be obtained within the residency span.

7. Finally, the present obstacles in the organization of interns and residents into the accepted pyramidal system are being overcome.

The year of the invention of Fulton's steamboat gave us *Alibert's disease*, or mycosis fungoides. Jean Louis Alibert, born in France, 1766, was the first to use the painter's palette and burin in the deliniation of diseases of the skin. The founder of the French school of dermatology, he evolved a Natural method of classifying skin diseases which caused much confusion and did not gain universal acceptance. He was the first to describe mycosis fungoides, and is accredited with the description of Pustule d'alep, which is also called Alibert's disease. Cheloid also has Alibert's name attached to it. There is a Mentagra of Alibert, or sycosis of the beard. Alibert, who was titled a baron, died in 1837.

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Medicine Makers Urged To Temper Inflationary Economy

Dr. J. Mark Hiebert, vice president, Sterling Drug, Inc., participating in a panel discussion on medical marketing before the American Pharmaceutical Manufacturers' Association at the Waldorf-Astoria recently, urged medicine makers to do their share in keeping prices down.

Dr. Hiebert said, "At this minute we have no allocation or price control problems, and materials are in greater supply than they have been in some time, but we are faced with new and perplexing problems in adjusting ourselves to an inflationary economy."

Elaborating on medical marketing, Dr. Hiebert said that the manufacturer's first consideration was "to give a new product a chance to succeed." Without withholding important medical discoveries from the public for business reasons, he urged concentration on comparatively few major introductions each year. In this way the money available for promotion can be more intensively and intelligently used.

Rounding out his talk, Dr. Hiebert disclosed his technique of promotional research. After basic laboratory research and product development, and after clinical testing, he recommended that the product be distributed to about 100 leading physicians throughout the country. From these leading physicians, additional clinical data may be obtained on a mass basis. These doctors are glad to cooperate, the doctor reported, because they "contribute to medical progress while winning prestige as leaders in their own communities for their pioneering."

White House Is Place Of Meeting For National Conference On Family Life

A National Conference on Family Life is scheduled for May 6, 7, and 8, Washington, D. C., with President Truman offering the White House as a place of meeting.

The American Social Hygiene Association is one of 112 sponsoring organizations representing doctors, lawyers, businessmen, labor leaders, clergymen, housewives, teachers, social workers, professors and young people with a total membership of 40,000,000. Until the actual meeting commence in May, committees in all parts of the country will be working on reports for delegates to consider when they meet in the White House.

The six general subject headings of the conference will be: Education; Health and Medical Care; Social Welfare, Guidance and Legal Services; Housing, Home Management and Community Planning; Economic Factors, and Inter-Personal Relations and Mental Hygiene.

National Cancer Council Extends Grants To Foreign Scientists

For the first time in the history of the National Advisory Cancer Council, which has been making recommendations for ten years to the National Cancer Institute, grants were given to scientists working outside the United States. The two recipients were Dr. A. Lacassagne, Institute Pasteur, Paris, who received $13,380 and Dr. L. Doljanski, Hebrew University, Palestine, who received $10,000.

Dr. Leonard Scheele, director of the National Cancer Institute, commenting on these awards said, "The making of these grants constitutes a move by the National Cancer Institute and the National Advisory Cancer Council to assist in the mobilization of an international attack on cancer."

Cornell University Medical College Celebrates Golden Anniversary

The Cornell University Medical College recently celebrated its 50th anniversary. The exercises were held in the Medical College buildings in The New York Hospital-Cornell Medical Center and included a business meeting of the Medical College Alumni Association, inspection of departments, conferences and a scientific exhibit of some of the 180 research projects now being conducted at the Center.

The scientific exhibits included demonstrations in pharmacology, anatomy, physiology, radiology, surgery, medicine, pediatrics and ophthalmology. Dr. George Papanicolaou, professor of clinical anatomy at the College exhibited the smear technique he has devised for cancer diagnosis.

Dr. Joseph C. Artusio, instructor in surgery and resident surgeon in anesthesia in The New York Hospital, demonstrated the latest methods of anesthesia, administered directly into the lungs. Dr. Eugene F. DuBois, physiology professor, exhibited an apparatus used in the study of pain and its relief.

An interesting display of corneal transplants used in certain cases of blindness for the restoration of sight was shown by Dr. John M. McLean, professor of clinical surgery of the Medical College and attending surgeon in charge of ophthalmology in The New York Hospital.

The business meeting of the alumni included discussion on the implementation of their recently initiated drive for $3,000,000 to be used for building a student residence and recreational center.

"The great need for the Medical College today," said Dr. Connie Guion, member of the Board of Directors of the Alumni Association and attending physician at The New York Hospital, "is more adequate housing facilities for the students. At present, living conditions are far from satisfactory, and no recreational center is available. The volume of work required of today's medical students makes proper living and recreational facilities of paramount importance."

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SOME MEDICAL USES OF VITAMIN E

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Introduction

In 1922 vitamin E was discovered by three independent sets of workers, Evans and Bishop (1), Mattill (2), and Sure (3). The year 1947 marks its Silver Jubilee, therefore, this is an appropriate time to resurvey their achievement. All the original experimenters used rats, and as a result described the principal evidences of E-deficiency as being foetal resorption in the female and testis degeneration in the male.

Such names as "fertility vitamin" or "antisterility vitamin" naturally grew up out of these rat studies and have been generally applied ever since to this infant among the accessory food factors. For years, those interested in it have been mainly veterinarians or physicians concerned respectively with the processes of animal or human reproduction. It was introduced into human therapeutics in 1931 by the Dane, Vogt-Moller (4) and an extensive literature has gradually accumulated since to indicate that it has value in many of the alarums of pregnancy.

However, in retrospect, one cannot help but wonder what would have been the history of this nutritional factor in its first 25 years if the original laboratory animal used in the study of E-deficiency had been other than the rat. The female, but not the male, mouse would have given much the same result as the rat. But the pullet would have displayed encephalomalacia, generalized oedema, and other curious phenomena. The hamster or rabbit or guinea pig would have revealed muscular dystrophy. If the monkey had been the test animal selected, it might have been decided that pigment deposit in the muscles and viscera or even peripheral vascular damage was the properest criterion of E-deficiency. And had anyone been so bold as to use man himself —as could happen in an antivivisectionist world— the deposition of tartar (5) on the teeth could have been the focus of study.

The association of vitamin E with the reproductive process, therefore, is largely due to a laboratory accident and it is almost time, 25 years later, that we broke the unfortunate linkage produced in most medical minds by those first aborting rats.

It was, of course, only a matter of time until continued laboratory and clinical investigation would reveal widespread and often apparently unrelated effects of deficiency of this vitamin in various animal forms, including man. That has been the story of all the other vitamins. But now that the inevitable has happened, one result has ensued which is temporarily unfortunate, although pleasantly challenging.

It has become very difficult to postulate any one theory able to explain concisely the ubiquitous tissue response to lack of this vitamin, "the most versatile and active of all the vitamins," so called by Hickman and Harris. Accordingly, no one theory is now generally accepted, unless phrased in vague and presently unhelpful terms.

Even the classification of the tocopherols among the fat-soluble group is anomalous, for although completely miscible in fat they occur chiefly in the animal body associated with protein. In the vegetable world, too, as Hickman and Harris remark, their association is again with the cytoplasm rather than the oil depots.

Plants very low in oil still require a normal complement of vitamin E. "In its primary function as an essential component of tissue, vitamin E behaves

* As read before Kansas City Academy of Medicine, Kansas City, Missouri, April 11, 1947. This paper will be concluded in the March Issue of **MEDICAL RECORD** followed by the complete bibliography.

as a water-soluble vitamin that requires a lipid carrier for transport. Only in its secondary function as an antioxidant does it generally behave as a truly fat-soluble vitamin." . . . "It is alpha-tocopherol and ascorbic acid which determine chiefly the stability of the food—and the reducing power or stability of the blood at the finish" of the digestive journey. "In the intestines, before absorption, the tocopherol saves the unstable fat from oxidation." . . . "It is the balance-wheel of the oil-soluble vitamins and the unsaturated fats. It is implicated in phosphorus metabolism—and its effects extend to the utilization of oxygen and the aging of the whole animal organism." (6)

If one were to seek a basis in recent biochemical and physiological experiment for the clinical uses of the tocopherols to be discussed, he would refer to the studies of Morgulis and Spencer, Madsen, Mason and his co-workers, Houchin and Mattill, Shute, and Govier.

Mason (7) pointed out that the classical foetal resorption associated with E-deficiency, in the rat at least, was due to vascular abnormalities such as stasis, distention and thrombosis (notably venous), occasionally terminating in ruptures into the decidua and even frank haemorrhage.

Analogous phenomena are presented by E-deficient chickens, where there is some evidence, too, of functional alteration of the capillary wall. Mason and his students (8) have gone on to study the characteristic pigment deposits seen in the tissues of E-deficient animals and in doing so have noted that the heart muscle of rats after long E-deprivation showed fibrotic foci, as Madsen (9) had intimated earlier.

These lesions did not disappear, at least histologically, after feeding tocopherols in large dosage for as long as five months. There was gross cardiac enlargement in a large series of long term E-deficient rats these authors autopsied. The pigment in these E-deficient hearts seems to be identical with that found in brown atrophy in the senile human heart. (10) Analagous findings in the hearts of E-deficient rabbits are reported by Gatz and Houchin. (11)

Morgulis and Spencer (12) called attention to the significant increase of cholesterol and total lipid in the blood and muscles found in association with the tocopherol-deficient muscle dystrophy of rabbits. This suggests a disturbance of the cholesterol metabolism of muscle in E-deficiency.

Dowd has found high cholesterol values in 80 percent of his cardiac cases and all the muscular dystrophies he has seen. These levels fall after the administration of tocopherols. The former workers also found in their animals a striking loss of muscle creatin and an associated creatinuria. Such dystrophic muscle showed an increased consumption of oxygen, a phenomenon studied intensively in the hamster by Houchin and Mattill. (13)

In the dystrophic hamster if the muscles are left intact the oxygen consumption can rise to 250 percent of normal, and then return toward normal within 27 hours after the oral administration of alpha tocopherol. The phosphate form of the latter given intravenously actually restores this oxygen consumption to normal in about four hours! In vitro experiments run parallel. Restoration of normal creatin, however, is slower.

It is noteworthy that tocopherol does not affect the oxygen uptake of muscles already well oxygenated. It appears that the tocopherols require phosphorylation in the body before becoming active and react on the succinoxidase system, in dystrophic muscle at least.

It is known that cardiac anoxia breaks down coenzyme 1, which is needed for the proper metabolism of lactate, the preferred substrate of heart muscle. Govier *et al* (14) have shown that alpha tocopherol can both inhibit coenzyme 1 nucleotidase and also can inhibit the succinic and lactic enzymes.

They suggest that if heart muscle in congestive failure is E-deficient, as its low creatin content might suggest, this deficiency would permit coenzyme 1 nucleotidase to act in a system already anoxic and so produce the breakdown of coenzyme 1 known to occur in heart muscle. Such a breakdown of coenzyme 1 would seriously derange heart metabolism. It is noteworthy that either digitoxin or alpha tocopherol seems able to prevent this.

The recent studies of Proger and Dekaneas (15) on Cytochrome C, an oxidizing agent in the tissues capable of relieving intermittent claudication and anginal pain, offer an interesting parallel to the clinical achievements of the tocopherols recorded below, and suggest that at least one vital role the latter plays may be in cellular oxidation. Hove, Hickman and Harris (16), indeed, have observed that the tocopherols have a protective effect on rats subjected to anoxia due to low atmospheric pressure. The theory that vitamin E is anti-oestrogenic can be supported by many observations (17), and actually provided the philosophic basis for those clinical studies of ours to be described below.

This theory has had its critics; but it may be pertinent to ask if such a pyramid can rise steadily higher on a crumbling base. Finally, the recent report of Gullickson and Calverly (18) reveals that cattle deprived of vitamin E die of heart failure, showing electrocardiographic and post-mortem changes closely analogous to those found in human patients with degenerative cardiovascular disease.

It should be noted that Hickman and Harris (6) have calculated that the average American industrial worker gets only from 10 percent to 90 percent of his requirement of the tocopherols in his daily diet.

Some Surgical Values of the Tocopherols

The exploration of the surgical uses of the tocopherols has barely been initiated. One of its greatest handicaps, of course, is the widespread belief amongst surgeons that vitamin E is firmly enclosed by obstetrical fences. Perhaps in times when surgeons are doing operative cardiology and taking over much gastric and chest disease, obstetrical "boundary-jumping" may be tolerated occasionally.

If one could utter a general rule by way of introducing the subject it would be that wherever improved capillary circulation or better oxygen utilization can improve any pathological condition, surgical or otherwise, the tocopherols should play a helpful role.

In all the clinical entities to be discussed in this paper, it should be remembered both that the number of cases we have studied is small and that our series is "uncontrolled". The small numbers are to be ascribed to the fact that the authors have no access to hospital wards or to any facilities other than their private practices and one of them is a surgeon, one an internist, and one an obstetrician. This is not their fault, therefore, merely their misfortune.

Their series is "uncontrolled", for the same reason. Would it be apropos to point out that "ideas" and "controls" often seem to be incompatible? Those who have many patients on whom they may run extensive parallel series too rarely put their opportunities to creative or original use. They seem to do their best work checking the observations of others. If one must choose he might forego the controls.

Statistically-minded physiologists must not corrupt the necessarily humane view of physicians. In this respect one is reminded of the problem facing Roux with his diphtheria antitoxin in the Hospital for Sick Children, Paris. Should all the children get his life-saving serum or only half? He chose to inject all. Was he wrong? And have we not had too many centuries of pitiful cardiovascular "controls"?

Indolent Ulcers

We have seen eight of these and will describe two. One patient, a man of 63, had a right leg covered from toe to knee with old and recent ulcers of all sizes, up to two inches in diameter. He had had this condition off and on for 19 years on an arteriosclerotic basis, and the present exacerbation dated back to 1945. He had been treated in bed with local applications with little or no relief for a month before one of us (A. V.) first saw him. He was promptly given 500 mgm. of tocopherex (Squibb) per day. He began to show improvement in one week's time, was nearly healed in eight weeks, and was completely healed in 10 weeks.

Another patient, a woman of 76, had had recurrent ulcers of both lower legs for 18 years. She came under our observation (E. V. S.) for fundus carcinoma. It was then found that she had had an indolent varicose ulcer over the left internal malleolus for the preceding six months. There was great improvement in this ulcer in the next 10 days on tocopherol therapy and it was completely healed in 15 days.

During this time the patient was recumbent after a curettage and during x-radiation, but she had been quiet for months before in a boot of Unna's paste with little or no result.

We ascribed the rapid and effective response of these patients to an increase in local capillary circulation. Indeed, the affected extremity after treatment often became warmer than its mate.

Many other dermatological conditions characterized by defective blood supply from whatever cause may prove to respond to tocopherol therapy. This hope is supported by our old observations on pruritus vulvae *et ani* and the microphotographs of that paper. (19)

Arteriosclerotic Gangrene

Our experience is limited to two cases, one of which may be described here. A man of 74 years of age was admitted to St. Joseph's Hospital, London, March 19, 1947, with areas of moist and dry gangrene of both feet and legs extending up halfway to the knees and dusky, cyanotic hands.

The blood sugar was normal but the N. P. N. was 43 mgm. percent and sedimentation rate 76. An x-ray of his legs showed considerable arteriosclerosis, calcification being marked in the left leg. He was given 300 mgm. Ephynal per day beginning March 23 and on the 26th he mentioned "pins and needles" in his feet and a change for the better was apparent at the upper limit of his lesions. His hands were no longer cyanotic.

Two days later pulsation in the left popliteal artery was first palpable, and by the 30th most of the epidermis of the legs and dorsum of the feet had sloughed off, leaving normal, pink skin beneath. The more superficial gangrenous areas were rapidly healing under loosening scabs. A week later several of these had been cast off, and pulsation could be detected in both posterior tibial arteries for the first time. On April 18th, his right leg and foot were almost normal, all the gangrenous areas well healed, and the skin color of the legs and feet were nearly normal. Only a few of the deeper scabs on the left foot had not detached themselves at this time, and by the end of six days, his feet were healed.

Thrombophlebitis and Phlebothrombosis

We have treated nine such cases, six of them puerperal and one at eight months of pregnancy. Four of the seven on whom blood studies were done had low platelet counts initially, and these gradually and steadily rose under treatment with the tocopherols.

As the temperature charts of these patients indicate, any associated fever usually fell promptly. Objective and subjective improvement were both rapid. The redness and tenderness soon decreased, and the peripheral oedema followed suit, but more gradually.

It should be remarked that thrombosis may develop during tocopheral therapy but then is mild and responds quickly to a higher dosage.

One of these puerperal patients had a course of such importance from the standpoint of theory that it should be described in more detail. This woman, age 36, was sectioned for a huge "hydramnios". A small uterus was found and a 5 lb. 6 oz. child was delivered! Then an enormous malignant pseudomucinous cystadenoma of the right ovary was removed. It filled the whole right side of the abdomen and reached far to the left of the midline. The whole ascending colon, much of the inferior

surface of the liver, and many loops of the small bowel adhered to it.

The woman had a moderately easy postpartum course for two weeks, almost without fever but with some abdominal distention. At the beginning of the third week she developed an acute sepsis, with fever spiking as high as 105 degrees. This proved to be due to a haemolytic bacillus coli. At the time of the onset of the hectic fever the whole left lower extremity suddenly bloomed into a typical phlebothrombosis. There was no local heat nor redness but some linear tenderness, great oedema, and Homan's sign. The platelet count was then 266,000. Phytoferrol (B. D. H.) was administered orally in doses of 300 mgm. per day.

At the end of three days there was no evidence that there had ever been a thrombosis of that extremity, and the patient moved it as freely as ever in the bed. As she was nauseated the tocopherols were discontinued. On the day following that she suddenly suffered a pulmonary embolus in the right base, was put into an oxygen tent, remained so nauseated she refused both tocopherols and food, and was carried along on streptomycin, transfusions and fluids. Two days after the phytoferrol was stopped both legs, especially the left, became oedematous generally, with minimal suggestion of thrombosis in the left calf. The platelet count then was 156,000. She was temporarily unable to tolerate tocopherol capsules, as she vomited everything. However, in a few days she took them again, but has shown no response since. She runs a low fever and is gradually dying of myxomatous peritonei, and on April 6th her platelet count was 360,000.

We ascribed these results to a direct effect of the tocopherols exerted at the site of thrombosis. There is little doubt that in a fresh phlebothrombosis the clot itself is attacked in a direct and devastating way. This amazing possibility was first suggested to us by our old preceptor and friend, Dr. James E. Davis, formerly pathologist at Wayne University, Detroit. But in thrombophlebitis the reaction on the thrombus itself must play a lesser role since a thick thrombus can be felt long after all other evidence of phlebitis but a rise of sedimentation rate has vanished.

Resolution always seems to be uniform over clots of any length. If the clinical improvement could be ascribed merely to an improved collateral circulation providing a bypass around the obstructive lesion one would expect a quicker subsidence of the distal oedema than occurs, and a slower subsidence of fever.

In 1927 Leriche suggested that local vasospasm was a factor in phlebitis and many writers have since confirmed this. (20) There is some evidence for a sympathetic supply to the walls of the peripheral veins (21), as witnessed in the results achieved by sympathetic block in phlebitis. It may even be possible that the tocopherols (by a "medical sympathectomy", to quote our friend, Dr. George Dowd) relax the damaged vein at the site of its thrombus, permitting a current of blood and healing agents to seep past and over the clot. This explanation was first broached to us by Dr. Wallace Shute, and perhaps best explained the phenomena that had come to our notice.

Recently we have come across the very conclusive paper of Pereira (22), which demonstrates clearly the sympathetic innervation of the great veins of the leg and also the fact that sympathetic block in phlebitis patients both permits a circulation over and past the thrombus and also increases the collateral circulation. We have found only one reference in medical literature (23) to embolism following sympathetic block for thrombophlebitis, but the possibility of a clot being loosened by the relaxation of its constricting vein or, in phlebothrombosis, from a direct attack on the thrombus, must be borne in mind in such management. Perhaps a small dose and a more gradual response would be desirable when giving tocopherol, at least to phlebothrombosis cases.

The bearing these observations have upon our views on cerebral thrombosis and coronary thrombosis are of course, only too obvious.

A point of considerable theoretical interest, too, is the increased incidence of thrombosis in the winter months, and in the Northern as against the Southern States, as mentioned by Ochsner. (24) This could be ascribed directly to the action of cold, as he does. But it could also be suggested that availability of dietary tocopherols might be the more accurate answer.

Similarly, there is a winter increase in the suffering of cardiac patients, and to anticipate a remark to be emphasized later, the dosage of tocopherols required by such cases is higher in late winter than during the summer. The authors are reminded of the coincident rise in oestrogen values (25) (26), a point which bears on their theory of oestrogen—vitamin E antagonism. (17)

Should every puerperal patient be given tocopherols in order to avoid phlebitis? Such treatment would promote lactation, at least in a small percentage (27), but of course could not be used if a patient were toxic for fear of precipitating convulsions. (28)

Thrombongiitis Obliterans and Related Conditions

We have studied one verified and one probable case. These are reported in detail elsewhere. (29)

Miss M. T. age 56, single. She has never used tobacco. She began to complain of pains in her toes in 1938. The toes became dusky red, at times almost purple, and gangrene was feared as their condition became progressively worse. At that time a glass boot and other such measures over a period of 15 weeks gave temporary relief. With Buerger's exercises and careful avoidance of overexertion and heat (!) (this has always bothered her more than the cold), she maintained the status quo until July of 1946.

Frequently during the intervening eight years the toes were ulcerated. The greatest care was required to avoid major infection and to heal these small ulcers. Once, in 1942, she almost developed

dry gangrene of several toes of both feet and spent seven weeks in bed.

The toes were always numb, as were the feet and lower legs. When she wanted to pick up anything from the floor she could not kneel with her numb legs, but sat down in order to do so. She often awakened in the night "to see if her feet were still there". There was considerable oedema of the feet and lower legs during these years, which was not altered appreciably by a salt-free diet.

On June 12, 1946, she was given 200 mgm. Ephynal per day—our first case of peripheral vascular disease treated with the tocopherols. On the 15th she "could scarcely sleep for the tingling in her arms and legs", and in the next few days purpuric areas of all sizes appeared over the trunk and extremities, accompanied by sensations of "pins and needles".

She had had these purpuric manifestations at her x-ray menopause 10 years before, but not in the interim. In 10 days time her oedema decreased considerably, and her toes had practically returned to normal color and felt warmer. By July 23rd her feet and toes were no longer numb. She now could kneel on the floor to work or pick things up.

Trauma to the toes was now felt as pain. On three or four occasions she stopped her tocopherol therapy or reduced it, but each time her oedema and other difficulties recurred promptly. Her chiropodist could always detect changes in her dosage. Her corns began to trouble her again as sensation returned to her toes, and they regained normal color. Actually it seemed to her that the corns grew faster than before. She is now leading a very active life as a practical nurse on a difficult case.

Mr. S. K., age 48, a veteran of the last War, developed a case of thrombangiitis obliterans in 1944, first regarded as Raynaud's disease or vasomoter instability. His hands and feet were almost equally affected. Repeated ulcerations of the toes of his right foot finally led to amputation of the right leg above the knee in October, 1946. As the stump failed to heal two skin grafts in succession were applied, both failing to heal.

The condition of the other leg rapidly became worse, and, when first seen by one of us, (A. V.), on February 13, 1947, he had been sent home on two weeks leave before returning to consider its amputation. The site of the unhealed skin grafts was a raw ulcer. For a fortnight he was given 300 mgm. Ephynal per day, but not required to reduce his cigarette consumption. By the fourth day of treatment he began to feel improvement. On the eighth day increased urination developed and he no longer experienced pain in his extremities.

By February 24th his phalanges were normally warm and of good color. The recalcitrant stump ulcer was now completely healed and felt normally warm. On March 14th he was able to walk for four hours without discomfort, and his hands and remaining foot seemed nearly normal.

Our friend and colleague, Dr. C. K. Stuart (30) has treated four patients displaying intermittent claudication with the tocopherols, with excellent results in three of them.

Mazoplasia

Our experience with this condition has been minimal. But our friend and colleague, Dr. Ivan Smith, has used tocopherols in its management for several years past. The underlying reason, of course, is that oestrogens seem to be so closely implicated in the aetiology of mazoplasia that the condition has even been called oestrogenic mastitis, and we have long believed the tocopherols to be anti-oestrogens. (31)

Dr. Smith is summarizing his results in the treatment of mazoplasia for publication, but permits us to say that the tocopherols appear to have benefitted at least half of his last 20 cases.

Fibrositis, Myositis, Dupuytren's Contracture

Our experience here has been too small to record. However, the results achieved by Steinberg (31) and most recently by Ant (33) should stimulate much wider study.

Medical Uses of the Tocopherols

In Internal Medicine the tocopherols have a vital and increasingly important role to play. If they are of fundamental importance in the metabolism of fats and proteins, as is now believed, much that we will not even try to touch on here is to be expected from further studies.

Cerebral Thrombosis

After what has been said above on the subject of thrombosis in general, little need be added here. One of the more puzzling phases of our studies has been the trivial influence the tocopherols usually exert on hypertension *per se* but the fact that in hypertensive heart disease there is generally a small drop of both systolic and diastolic blood pressure coincident with the cardiac improvement —and the symptoms ascribable to hypertension are often relieved out of all proportion to the improvement in tension thus achieved. This parallels much of the experience of Smithwick with his surgically treated hypertensives.

We have studied a score of cases of cerebral thrombosis, most of them of months or of as long as two and a half years standing. Even in the old cases improvement was achieved, up to perhaps 25 percent of the disability. This gain was made principally within the first three weeks, after which little further improvement occurred. Yet Dowd tells us he has seen definite improvement in a woman whose stroke occurred six years previously. As would be anticipated, the cases treated most promptly did best.

If cerebral thrombosis occurs in end vessels, as medical texts have long contended, the theoretical interest of this type of case is further enhanced. One of our most interesting cases (W. E. S.) was that of an elderly lawyer who had experienced his

accident in 1944, two years before he was first seen by us.

His outstanding complaint was a central scotoma of the left eye, probably on an arteriosclerotic basis. His blurred vision dramatically improved in three weeks time. Before treatment he could distinguish a person standing 6 feet away but not his features. Afterward he could differentiate all his major features.

The benefit these patients experienced may have been strictly analagous to that seen in thrombosis elsewhere. Or gliosis itself may have partially responded, as in Steinberg's cases of fibrositis and fascial contracture. Dowd suspects that some brain cells live in a twilight state, neither dead nor yet fully alive, until such a reparative stimulus as the tocopherols reaches them and enables them to regain at least a portion of their former function.

If every hypertensive were given tocopherols would the incidence of apoplexy be reduced?

Neuromuscular Dystrophies and Degenerative Cerebrospinal Lesions

We have studied few or none. In reviewing the literature, however, we are struck by the small dosage of vitamin E used by Bicknell, Wechsler and others. The histopathological studies of Davison (34) are so impressive that one is led to speculate on the possibility that higher doses of the tocopherols might be helpful clinically.

Our experience with the tocopherols in the therapy of any condition is that nothing, or next to nothing is achieved by inadequate dosage. Half a dose does not give half relief, but none.

We might add that at least in early cases of paralysis agitans the tocopherols appear to be helpful —but here again our experience is too limited for further comment.

Nephritis

Our observations do not extend beyond the three cases already reported by one of us (W. E. S.). (35) It would seem that acute nephritis, perhaps even some examples of true nephrosis and chronic nephritis, respond to the administration of the tocopherols. The mechanism probably is best explained by the fundamental histological studies of Martin and Moore. (36) We should emphasize at this juncture, perhaps, that the response of our three cases of acute nephritis was as prompt and dramatic as anything we have ever seen the tocopherols achieve. The most interesting theoretical feature of these results, in our minds, is that an inflammatory lesion responded to nutritional treatment! One of our research group, Dr. Floyd Skelton, is engaged in a study of any direct or indirect role vitamin E may play in infectious and toxic processes. The whole problem of the relation of nutrition to infection has been discussed at length by Schneider, *Vitamins and Hormones*, Vol. IV, 1946.

We know of a patient with amyloid disease of the kidney who has shown great improvement under tocopherol therapy.

Purpura

The tocopherols have a specific influence in increasing low platelet counts and decreasing capillary fragility. These effects are especially easy to demonstrate in the thrombocytopaenic purpuras, of course. Our results in this interesting pathological condition have been described in detail elsewhere (37), but we should emphasize here that low platelet counts and increased capillary fragility have always, in our limited experience, responded to high dosages of the tocopherols, that these improvements are more gradual than some of those mentioned earlier in this paper, and that the therapeutic and maintenance dosage can be very high—as high as 700 to 900 mgm. per day.

Because some purpuric conditions are so acute in onset and course and because of this high dosage they present an outstanding instance of the value of an injectable form of alpha-tocopherol. Many patients are unable to tolerate so large a dose orally and need parenteral supplements. Parenteral E seems to take effect in one-half to one-third the time that oral doses require.

There is a widespread belief that splenectomy is the treatment of choice for thrombocytopaenic purpuras. We have seen patients made worse by splenectomy and certainly these very cases have been very difficult to control by means of the tocopherols.

We have studied several cases of Henoch's and Schonlein's purpuras but because it is so difficult to assess results in these types prefer to make no comment on our results. We suspect that the tocopherols are of some value, however, although perhaps they have less to offer than in the thrombocytopaenic type.

Vision

We have been impressed, as was Dowd, who first called this phenomenon to our attention, with the improvement in eyesight observed by some patients on intensive tocopherol treatment. Many who were about to purchase glasses no longer found it necessary. One woman became able to drive her car at night again, as she had not been able to do for years. Her optical prescription has actually changed.

Miscellaneous

Bearing in mind what has been said above of the physiological effects of the tocopherols it is obvious that they may be valuable for many conditions for which we have not used them, e. g., chronic tuberculosis, burns, the non-union of fractures, osteomyelitis, even wound healing, to cite just a few unrelated pathological types. These speculations are dropped merely to stimulate further study of vitamin E therapy.

Dowd tells us he has used it successfully for acute pyelitis in children, for chronic pyelonephritis, for arteriosclerotic encephalomalacia, as well as postencephalitic chorea, pseudobulbar palsy, muscular dystrophy and diabetes mellitus, among other conditions.

A word about diabetes mellitus. On June 6, 1936, one of us (E. V. S.) began a study of blood oestrogen values on a small series of treated and untreated diabetics provided by the courtesy of Dr. E. M. Watson. The finding of high oestrogen values was so consistent in this group that the author suspected that here was a change unaffected by insulin that

perhaps could be correlated with the outstanding diabetic degeneration unaffected by the hormone, *viz.*, peripheral arteriosclerosis.

However, it proved to be impossible to continue the diabetic study and no more has been done on it by us since that time. In 1946, Dr. A. G. Worton of the Warren-Teed Company called our attention to the fact that vitamin E therapy could, occasionally at least, decrease the insulin requirement of diabetics.

Dr. A. B. Vogelsang had a similar experience with one or two private cases. Beyond that we have been unable to pursue the subject.

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NOVOCAIN INTRAVENOUSLY IN TREATMENT OF DELAYED SERUM SICKNESS AND IN APHYLACTIC MANIFESTATION DUE TO FOOD FROM KNOWN AND UNKNOWN CAUSES

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During the perusal of various foreign Medical Journals, we observed the articles by David State and Owen Wagensteen, who published a detailed study on 27 cases, (*Jour. Am. Med. Assn.*, Vol. 130, Pp. 990-995, April, 1946) dealing precisely with the application of the intravenous administration of procaine for the treatment of manifestation of delayed serum sickness.

Following those articles Appelbaum, Abraham and Sinton published, in the same magazine, one case of a cure of serum sickness, following intravenous administration of procaine.

The methods of treatment for the troublesome symptoms and the usual relapses of serum sickness have not satisfied us as to the desired immediate result of their cure. The effacing of all these symptoms in the patient have prompted us to study this treatment, bearing in mind all bibliography obtainable. Consequently, we have stressed the part concerning administration of the derivatives of P-amino-benzoic-diethylamino-ethylesteros (novocain) intravenously, that is, how far they do or do not act undesirably and in what respect they have been currently employed.

The works of Einhorn (1905), Bier (1909), Goyanes (1912), Harvey (1939), Lerich (1941), Breton and Gedoux (1942), and Lundy (1942) and the works of Cohn, on the application of this method against aphylactic manifestations which appear after the administration of bovine crystallic albumine, (to replace a quantity of blood) with such satisfying results, encouraged us to use the following method to administer drop by drop, novocain solution—2 percent in a quantity of 500 cc. and at intervals of infusion (injection) of 2 hours with most satisfying results.

We do not neglect to say that our cases include eight of serum sickness, uniquely caused by injection of antitetanic serum (which we have lately employed on a large scale, owing to many wounds caused by recent events in Greece) and three aphylactic manifestations due to food, from unknown causes.

We also note that instead of procaine we have used novocain because, from a pharmacological point of view, it is of the same substance and it is known that if novocain is used with any kind of salt it is poisonous to the protoplasm.

Our cases, due to injections of antitetanic serum, are the following:

Case 1: Sub-Lieutenant of the reserve N. T. of 451st. battalion, Class 1939. He entered the 401st Hospital as an emergency case on January 23, 1947, with a large open wound on the left knee caused by the overturning of his motorcycle. After the cleaning of the wound it was partially sutured and drained—also an injection of antitetanic serum according to Besredka, was administered.

The course of the wound was normal and progressed well, when, on January 28, 1947, five days after injection of the serum, a general aphylactic rash composed of many large circles appeared, accompanied by violent itching and by such pronounced oedema that the eyes were completely closed and lips very swollen, besides the whole general condition which presented most troublesome phenomena.

Without any other treatment, at midday we administered novocain 2 percent intravenously in 500 cc. physiological serum at intervals of two hours. We observed that after the first 10 minutes of the injection, the itching ceased and the oedema decreased visibly until it disappeared completely 45 minutes from the beginning of the injection.

We were obliged to stop the injection on the 78th

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minute, after having infused 350 cc. because chills and fever (41° C.) set in, and temperature returned to normal by crisis, after a few hours. Since then the patient progressed favorably, without any relapse, until he left the Hospital on February 3, 1947.

Case 2: Policeman A. S. Class 1945. He was entered as an emergency case on February 16, 1947, with a wound from a bullet which had pierced his left calf, due to a chance case of self inflicted wounding. As he had never undergone an injection of antitetanic serum, it was administered to him in one dose. Eight days after the injection, an aphylactic rash was observed, beginning from the spot of the injection and which rapidly generalized, specially to the limbs and body and less on the face. Without any other treatment we employed the same method.

During the infusion the itching disappeared completely and the rash paled gradually, when five hours after the beginning of the injection it had completely gone and the patient progressed satisfactorily until his exit from the Hospital without relapses. He accepted the infusion without any reaction.

Case 3: Private D. S. (Reception Centre for Technicians) Class 1942. He was brought in as an emergency case on February 28, 1947 with a wound from a bullet which had pierced his left foot and which caused a compound fracture of the first metatarsium. He was given an injection of antitetanic serum. On March 3, 1947, he showed an aphylactic rash composed of small circles, plus acute itching over the whole body. The nurse immediately administered calcium intravenously, adrenaline subcutaneously and gave calcium *per os* without improving his condition.

At midday on March 5, we employed the same method in this case when, in the first 20 minutes during the infusion, the itching and the discomfort ceased and in the first hour there was a decided diminishing of the rash which disappeared completely the seventh hour after the beginning of the injection. He proceeded well without relapses until his departure. The private accepted the infusion very satisfactorily without any reaction.

Case 4: Private G. G. 562 Battalion, Class 1945. Three months ago he had a grave infectious wound in his right arm from a bullet, and posttraumatic paralysis of the median and ulnar nerve. A typical nerve suture was made on February 28 and as usual, due to the fear of hidden microbism, we administered antitetanic serum according to Besredka.

Eight days following the injection the patient showed a pronounced anaphylactic rash and a development of the neurotic oedema, of the upper limb, where the nerve had been made.

We administered an infusion by the same method at intervals of two hours and 15 minutes. During the first 10 minutes of the infusion the itching ceased and he felt the diminishing of the neurotic oedema which also was visible to us. During the infusion on the 25th minute the rash disappeared. However during the night, the anaphylactic syndrome had a relapse, but without causing a relapse to the neurotic oedema. We were obliged to repair the infusion with the same quantity, the symptoms gradually decreasing disappeared completely during the first ten hours.

After operations on the nerves or on inflammations of the same, a neurotic oedema is often caused and is accounted for by neurotic action on the capillaries (through the irritated therin sympathic fibres) which can easily be traversed by the watery substances of the blood. Others account for this by local injury to the circulation or by the formation of irritating substances (histamine) which act on the capillaries either directly or indirectly (by osmotic or voluminar pressure, or transformation of the electrolytes of calcium and potassium).

This stable, rapid and perfect decreasing of the neurotic postoperative oedema following the administration of the above infusion of novocain, which we have tried in order to establish the following thought for the explanation of the action of novocain, has also been noticed on the below mentioned:

A: *Private N.* who showed an oedema of the right hand following a nerve suture of the ulnar nerve in which case the oedema lessened visibly rapidly disappearing completely on the 52nd minute during the infusion.

B: *Private K.* who was given a nerve suture of the right external popliteal nerve, and during 48 hours showed a neurotic oedema of the foot whose oedema disappeared completely during the first hour of the infusion. In these cases the intravenous administration of novocain had the immediate and stable result of diminishing of the neurotic oedema.

Case 5: Patient K. S., Private employee of the Military Service, age 55. On March 6, 1947, he received an irregular wound of the frontal region which was sutured by us and antitetanic serum was administered. After 10 days a regular rash was observed on the whole body. An infusion was made of 2 percent solution of novocain.

During the infusion the itching disappeared, the rash, however, was long in taking a pale color. The next morning there was a relapse with pains in the joints and muscles. We repeated the infusion and, during that time the itching and the pains lessened. The rash disappeared completely eight hours later. Both infusions were well received.

Case 6: Sub-Lieutenant K. M. of the Police. Class 1925, Crete. In September 1946 he was amputated in the left thigh due to gangrene gaseous following a severe wound. The stump was abnormal and on March 10, 1947 under a general narcose with ether, we made a plastic operation and an injection of antitetanic serum according to Besredka. Six days later a heavy complete rash appeared accompanied by swelling of the lips and eyelids, general phenomena and vomiting, without signs of fever. The above technique was applied and after the twenty first minute of the infusion the itching lessened visibly; the pains in the joints disappeared, and the rash grew paler. At the end of the infusion the patient did not complain of any itching, the swelling had gone and the rash presented only a red surface on

the skin until that also, disappeared four hours after the infusion. The injection was well received and no relapse took place.

Case 7: Mrs. S. K., wife of a Surgeon. She presented a very heavy aphyllactic clinical state, as a result of an injection of antitetanic serum which had been administered seven days before. She had never undergone a serum injection. The symptoms were: Shivers, vomiting and a state of nervous excitement, arythmia of the heart, a fainting condition and an aphylactic rash formed by very pronounced large circles.

Some days before, she had been taking calcium *per os* and paroxysme calcium was injected intravenously with 3 injections of adrenaline in 12 hours, also cathartic salt, but she didn't show any improvement. Before the persistence of the symptoms she accepted the intravenous injection of novocain, when, after 20 minutes, during the infusion the itching and the rash and other symptoms disappeared completely. There was no relapse.

Case 8: Sub-Lieutenant I. O. (IX Battalion of Engineers) Cl. 1939. April 23, 1947 an antitetanic injection was administered, in one dose without reaction, due to wounding during his service. On May 20, 1947, an injection of antidypheritic serum was administered according to Besredka. Two days later a local reaction was seen on the spot of the injection (Spot of Arthus). Calcium and adrenaline were injected resulting in a slight reduction of the symptoms. We saw a very pronounced oedema of the lips set in May 1, and, at the same time a complete general aphylactic rash with strong itching and composed of many large circles.

He entered the Medical Clinic on May 3, in an alarming condition. Calcium and adrenaline were injected, cathartic salts and calcium *per os* without any improvement. The next morning at 6:35, an intravenous infusion of novocain solution was administered during two hours and 20 minutes. The itching ceased completely after the first hour, the oedema of the lips and eye-lids disappeared during the first hour, the rash during 90 minutes. The patient was able to get up five hours after the beginning of the injection and was walking freely. His recovery was complete.

From these most satisfactory results we were greatly encouraged and we set on an announcement of this special work, with a presentation of the patients in the Military Medical Society of Athens, April 25, 1947.

We warmly recommended the use of this method in cases of serum sickness, with the certitude of the satisfactory result.

We especially accentuated the following: 1. The rapid diminishing before the doctor's eyes of the clinical conditions or even the complete recovery from the serum sickness; 2. That the recovery is stable and usually without relapse, and in case of relapse it is extremely slight, considering that on eight cases only one had a relapse and this following a second infusion (within 24 hours) the result was then complete, stable and most satisfactory; 3. The harmlessness of the method and its being so well received by the patients; 4. The fact of the infusion being used without the assistance of any other medical treatment or dietetical efforts; 5. The possibility of its being done by a practical physician.

Although the exact explanation of the action of the drug is unknown we support the fact and agree chiefly that the antiacetylocholinic action of the drug must come first in the explanation as the novocain and its derivatives must be accounted for in the (on behalf of the acetylcoline) reduction of the possibilities for traversing the capillaries.

The antihistaminic action is primarily insufficient for the complete explanation of the cure of serum sickness. It is, though, fairly satisfactory, for the explanation of the diminishing of the postoperative oedema, but in this also, we must grant that there is cooperation with the antiacetylcholinic action as the passage of the sympatic tissues into the dorsal nerves is known. The above considerations are based on our observations as made in case 4, as also in the other two observations which follow it, especially for the neurotic oedema.

The immediate action of the drug on the cells and the adrenalinic actions did not seem satisfactory to us for the explanation and we have not discussed them.

This, because the amount of epinepfridine secreted in the body must not be considered as sufficient to combat serum sickness. We think however, that the consideration of adrenaline action for the cure of serum sickness through the action of procaine or novocain is unfortunate because as the adrenaline augments, so the sympathetic system is excited as also the organs served by it, and so the angiospasm will become more manifest. The serum sickness phenomena will not diminish, as based on the theory of the "floculation" of Lumiere, the bulb centres will be more excited and thus the serum sickness will extend. Besides that the opinion of the epinephridiac action, completely opposed to the more logical antiacetylocholinic action because, as the sympathetic nerve will become excited, the supply of acetylocholine will be increased.

At the same time, following the works of Colm who applied this method in other hyperaesthetic conditions of the organism, as mentioned by State and Wangensteen, without being able to know in which kind exactly of hyperaesthetic conditions it has been applied. We attempted the same in cases of trophical aphyllaxy from unknown causes. Our cases amount to the following three:

Case 1: Major A. L. Class 1929. He arrived, March 7, 1947, complaining that 25 days before, he first noticed an itching on the whole body. It was impossible to account for this as being caused by certain food, because each meal was accompanied by itching and a complete small circular rash.

He was put on a diet of vegetables and floury pastes without any improvement. He employed cathartic salts and adrenaline without any results. He appeared with a complete manifest rash without fever. The novocain infusion was applied and during the following days no new irritation was observed although no diet was adhered to. A week

later we made a complementary infusion without there being a rash and since then he is completely well. His food is varied and richly albumined.

Case 2: Private A. K. treated in the Hospital for dry pleurisy. Five months ago he witnessed from time to time an itching, aphylactic rash, especially after eating fat foods. From March 25, the rash has become regular and the itching troublesome. March 31, the injection was applied and during the first 15 minutes the rash and the itching disappeared completely and he was well until the following day when they repeated themselves with the same appearance and extent. A new infusion had *no effect.*

Case 3: Private I. P. Treated in 401 Military Hospital for a previous fracture of the tibia. For four months he had shown an aphyllactic periodical rash (5 to 15 days) lasting from 1 to 24 hours without special cause. On April 8, the infusion was applied. The first 30 minutes during the infusion the rash and itching disappeared. After a few hours the rash reappeared, but paler and less troublesome. Following that, relapses of various extent took place.

From those three cases of trophycal aphyllaxy, we have not been satisfied except in the first case when the cure was stable and complete, the other two must be considered as unsuccessful.

In spite of that, we will continue the applications, in other cases and in ones which may possibly present themselves through pharmaceutical sensibility.

We conclude that: The success of this method on serum sickness most satisfactory, stable and rapid, and suggest that it can always be applied fearlessly in manifestations of serum sickness.

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401 Military Hospital

AURAL ELECTROPHORESIS OF PROSTIGMIN

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In 1938, Aubry, Olivier and Oumikov (1) reported that the aural administration of acetylcholine by electrophoresis (iontophoresis) has definite therapeutic value in the treatment of certain forms of deafness, tinnitus aurium and Ménière's syndrome.

According to these authors, impaired hearing of the labyrinthine type and of the mixed type, and recent cases of tinnitus and of Ménière's syndrome respond favorably to this form of therapy. The writers also considered "ionisation" superior to the intramuscular injection of acetylcholine.

In 1933, Davis and Rommel (2) reported striking therapeutic results in patients afflicted with deafness and tinnitus who were treated with injections of prostigmin methylsulfate (1:2000) in conjunction with the administration of prostigmin bromide by mouth. It was pointed out that the therapeutic efficiency of prostigmin may hinge on its ability to stimulate the intrinsic muscles of the ear. The vasodilating properties of this drug also received attention. (3)

With the passage of time, increasingly contradictory publications appeared on the treatment of deafness with prostigmin injections. In spite of conflicting reports, this doctor felt in view of the published data, (1) that an attempt should be made to introduce prostigmin by electrophoresis into the aural tissues in the aforementioned conditions. For this purpose, the ear electrode described below was designed.* Aural electrophoresis should be performed by otologists who alone can evaluate this form of therapy, or by physiatrists who work in close cooperation with otologists.

* Supplied by J. H. Sliosberg, 102 West 80 Street, New York, N. Y.

Neurophysiological Considerations

The following considerations may help to focus some light upon the possible role of prostigmin in the treatment of auditory disorders. Motor nerve impulses are transmitted to the muscles at the neuromuscular junction. A chemical mechanism seems to be responsible for the transmission of the nerve impulse. (4, 5)

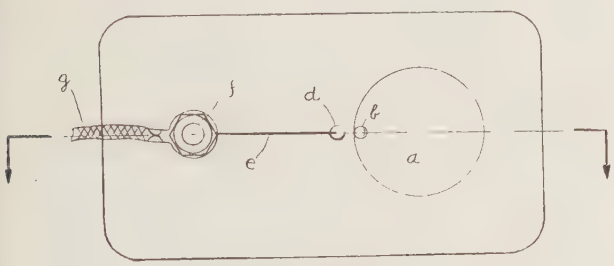
It has been suggested that the effect of nerve impulses on effector cells is accomplished through the release of acetylcholine at cholinergic nerve endings. (4) This substance is rapidly destroyed by an hydrolyzing enzyme called cholinesterase, which is inhibited in its action by prostigmin and eserin (physostigmin) with consequent prolongation and even enhancement of the action of acetylcholine.

These events could explain the favorable therapeutic action of prostigmin in myasthenia gravis which is characterized by weakness and fatigability of the striated muscles and where the amount of acetylcholine is apparently diminished. (6, 7, 8, 9) On the other hand, prostigmin causes spastic muscles to relax. The inhibitory effect of prostigmin on muscle spasm is believed to be due to a direct action of the drug on the spinal cord. (10, 11)

The drug's ability to reduce muscular hypertonus is made use of in the treatment of rheumatoid arthritis. (12) Both acetylcholine and prostigmin are parasympathomimetic drugs, with prostigmin being an excellent vasodilator. (13) It produces peripheral vasodilatation, involving mainly the arteries. The mechanism of this action is attributed to the neutralization of cholinesterase.

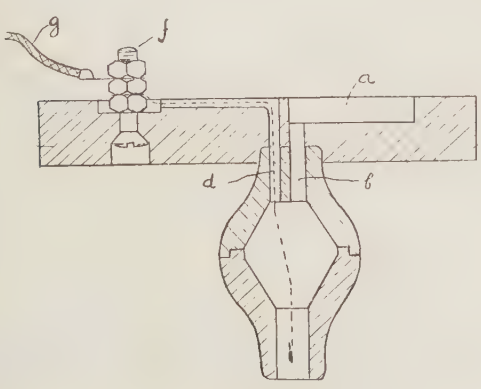
Aural Electrode for Electrophoresis

The electrode holder consists of a plate and an



TOP VIEW

ear piece. Both are made of plexiglass. The drug



SECTION AA

solution flows by gravity from receptacle *a* through conduit *b* into the bulb of the ear piece and into channel *e* from where it reaches the ear drum. The electric current, provided by lead *g*, flows through a beryllium or platinum wire *(e)* which terminates in channel *e*. Here and in the bulb, contact is established and maintained between the wire and the drug solution. The electrode assembly may be sterilized by boiling or alcohol.

Technique

One hour before the application of the aural electrode, the patient is given one tablet (mg. 15.—) of prostigmin bromide orally. This is done at the suggestion of Bourguignon to increase in the body fluids the number of the ions to be introduced by electrophoresis. After a thorough toilet of the ear, the dispersive electrode is placed upon the frontal eminence of the opposite side. (1) This electrode consists of a cellulose sponge which is saturated with warm tap water and is covered with a somewhat smaller metal foil. The dispersive electrode is held in firm contact with the skin by a rubber bandage, and the metal foil is connected to the negative terminal of the galvanic source. Then the patient lies down and places his head, with the ear to be treated uppermost, horizontally on a pillow which is covered with rubber sheeting. Some prostigmin is instilled into the ear, then the aural electrode is introduced into the external auditory canal whereupon more of the drug is added through the receptacle on the top side of the plate

The patient's clothing should be protected against soiling. After the conducting cord of the ear electrode is connected to the positive terminal of the galvanic apparatus, and all meters and controls are set properly, the electric current is turned on and its strength is gradually increased to one or two milliamperes. Mild tingling is all that the patient is permitted to experience, pain and burning sensations indicate irregularities, most often excessive current strength. At the end of thirty minutes, the intensity of the current is gradually reduced to zero; finally, the current is turned off.

Treatments are given three times a week. In the average case, a series of six to twelve applications is usually sufficient to indicate therapeutic benefit or the lack of it.

This technique of aural electrophoresis of prostigmin was followed in five patients. Three patients had impaired hearing; two of these had associated tinnitus. Two patients had tinnitus only. In all patients the auditory disturbances were present for a period less than eight months.

All patients were improved, except one with tinnitus. In view of the small number of patients, the favorable responses can not be considered conclusive, nevertheless the definite beneficial effect upon hearing and the relief afforded patients with tinnitus are encouraging enough to warrant further use and study of aural electrophoresis of prostigmin.

Summary

1. It is suggested to introduce prostigmin into the

ear by electrophoresis in selected cases of deafness, tinnitus aurium and Méniere's syndrome.

2. An aural electrode is described for the introduction of drugs into the aural tissues by electrophoresis.

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PATHOGENESIS AND SPECIFIC THERAPY OF AGRANULOCYTOSIS

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A case of agranulocytosis with true lymphocytosis was reported in September 1935 (1). This paper contained the statement that with the improvement of the condition of the liver, one noticed a decrease in the number of lymphocytes and the question was raised whether or not there could exist a specific connection between liver condition and white blood count.

The same patient suffered a severe relapse of agranulocytosis in April 1936, but for reasons beyond control of the author it was impossible to publish the report on the second attack at that time.

Since 1936, agranulocytosis has been increasingly encountered among patients treated with potent substances, such as sulfonamides and its derivatives and, more recently, thiouracil.

The present situation is summarized by Van Winkle *et al* (2) who, reporting on the clinical toxicity of thiouracil, state that there is no substance available influencing the outcome of agranulocytosis or aiding in the prevention of such reactions.

Newman and Jones (3) in their paper on agranulocytosis from thiouracil, mention that Daft and Sebrell (4) have identified the corrective factor as *folic acid;* but in their cases this substance failed as prophylactic and therapeutic treatment. Certainly, it looks as if since 1936 medicine has not made much progress in solving the problem of agranulocytosis.

Considering these facts, it seems justified to belatedly continue the report on the above mentioned case supplying important facts relative to pathogenesis and specific therapy of agranulocytosis.

The reported case concerned a female patient, age 59, whose past history revealed scarlatina at the age of four years, followed by polyarthritis, with frequent relapses of polyarthritis up to the age of 20. Four years later, she had an attack of severe icterus and since then has been suffering from liver dysfunction. In the same year, she had an attack of appendicitis (which had never undergone an operation), and at the age of 32 years, parturition. The next year she had a miscarriage, followed by an ectopic pregnancy five years later, which left ovariectomy. At the age of 39 years, amenorrhea; fourteen years later pneumonia followed by hemorrhoidectody. Shortly later, there was an attack of polyarthritis with pericarditis.

From August 1934 on, the patient was more or less continually sick with fever and pain, treating herself with tablets containing acetylosalicylic acid and aminopyrine. The blood count November 6, 1934 stated:

Erythrocytes : 3.400.000
Hemoglobin : 73 percent
Leukocytes : 3.800
Differential count : 100 percent lymphocytes only.

After being given pentnucleotide, the patient recovered slowly. From then on, she was under permanent observation.

September 10, 1935, another blood count showed a renewed decrease of leukocytes with still high relative lymphocytosis. At the same time the liver, having been found to be enlarged again, was given a new kind of treatment for this condition with the result that on November 2, 1935 an obvious improvement of the liver and the white blood count had taken place.

The improvement continued after injections were discontinued November 2, 1935 and on January 2, 1936 the differential count showed the best figures ever received.

From then on the patient, after having gone through an attack of slight grippe, started to complain of a lumbagolike pain which was disappearing slowly. From February 1936 on, she witnessed attacks of severe headache lasting for several weeks. Then, until the middle of April, there was a changing though not a fully satisfactory condition.

From Easter, 1936, the patient suffered a relapse. New symptoms appeared: pain in the bones of her legs and sternum swelling of nasal mucus membrane especially of left nasal passage, renewed lumbago with sciaticalike radiation into both legs. Finally, during the night she suddenly had severe chills with temperature increasing to 100.8 accompanied by profuse perspiration at dawn. The morning temperature was 98.0. She fainted while trying to get up and she had a severe headache.

Findings on April 29: General condition grave; face pale but nasal area strongly reddened; sclerae subicteric colored; nasal mucous membrane inflamed; left nasal passage clogged; oral mucosa pale (no tonsillitis); nose and oral cavity without ulcers. Heart: enlarged by one finger, first at apex and second aortic accentuated. Pulse 80, irregular, small, B. P. 105/72. Lungs: negative; liver—enlarged by two fingers, edge hurting to slightest touch. Spleen: enlarged, hurting to palpation. Urine: yellow, cloudy. Albumen and saccharum: negative. Urobilinogen: considerably increased.

White blood count:
Leukocytes: 2800.
Smear: showing only 72 white cells.
Differential count: Neutrophiles : 6 Stabs: 2
Lymphocytes : 60
Monocytes : 4

This time the patient was not treated with pentnucleotide but relying on the satisfactory result obtained with the new injection already mentioned, the same therapy again was applied with special consent of the patient. This injection called pronor is a compound of extracts from the liver, spleen and pancreas. It rapidly shifts blood proteins and is intended for specific therapy of diseases of the liver and related organs.

The injections of 1.5 cc., at first administered twice daily, proved to be extremely successful. There was no other medication and the gratifying change of the differential count, was entirely due to injections of pronor.

These reports, done by an experienced hematologist, show that the first two injections could not stop the decrease of leukocytes yet favorably acted on the differential count. It took four injections to overcome the lowest point of leukopenia and to have the lymphocytes decrease by 6 percent.

After ten injections all danger was gone, leukopenia had nearly disappeared; granulocytes had increased four times, while relative lymphocytosis was reduced to 58 percent. From May 4, 1936 on, by the patient's special request, only one daily injection was administered. In spite of the fact that after four more injections the leukocytes increased to 5800, granulocytes only improved by 1 percent to 37 percent. By May 16, 1936, with one injection daily, the leukocytes reached 7500 while granulocytes decreased to 23 percent and lymphocytes amounted to 73 percent. The significance of these values will be discussed later.

The clinical course was still more favorable than the blood count. During the night of April 29, 1936, the patient had a temperature of 99.8. From May 1, it was normal and it never exceeded 98.4. Nocturnal perspiration decreased considerably. The general condition had so rapidly improved after forty-eight hours that the patient was able to get out of bed for two hours on the following evening. The redness of the nasal area had disappeared as nearly as the swelling of the nasal mucosa.

Already on May 1 the enlargement of the liver had objectively decreased while the size of the spleen had become slightly smaller.

Painfulness of the long bones and the sternum had improved. Therefore, the patient considered herself cured 11 days later. She started to do her housework again but after a few days she felt pain in the right tibia. On May 16 an examination revealed a renewed enlargement of the left lobe of the liver, but there was no change in the condition of the spleen.

The result of pronor on agranulocytosis compared with that of pentnucleotide was definitely more favorable. In spite of the more severe leukopenia than in November 1934 (2300 : 3500) therapy with pronor succeeded in improving the white blood count much faster and to a degree never obtained with pentnucleotide. (Lowest figure for lymphocytes with pronor: 55 percent, with pentnucleotide: 65.2 percent.)

The formerly noticed shift to the left did not take place and above all, attacks of fever, heralding bacterial invasion, were completely avoided. Great importance is to be attached to the fact that the general condition of the patient improved so rapidly that she felt capable of resuming her daily housework.

Other favorable results with pronor in cases of diseases of organs of the upper abdomen, especially the liver, seem to justify the conclusion that pronor exerts a specific effect, for example, that certain substances from glandular organs of the abdomen have a specific and regulating effect on the white blood count while at the same time the diseased

condition of certain abdominal organs starts to improve considerably. Therefore, it seems justified to consider the development of diseases of the blood from a completely new point of view.

Agranulocytosis, discovered by Werner Schultz in 1922, is still to be rated as a relatively rare disease. While at first ulcerative pharyngitis was deemed necessary for development of agranulocytosis, later observations showed not only that this condition is caused by secondary bacterial infection but that agranulocytosis may also take the course of chronic disease with frequent relapses. Among the substances said to bring agranulocytosis about are aminopyrine (benzol ring), arsen, mercury and gold compounds; sulfa drugs and thiouracil already being mentioned.

The opinions on pathogenesis of agranulocytosis have changed through the years, but even at present there seems to be no general agreement on the development of this dangerous condition. Reporting on fatal agranulocytosis resulting from thiouracil, Ferrer, Spain and Cathcart (5) state, "it is thought that this complication occurs on the basis of developing sensitivity or idiosyncrasy rather than on cumulative effect of the drug."

Rubinstein (6) commenting on agranulocytosis following thiouracil administration remarks that agranulocytosis appeared to be the combined result of hypoplasia and lack of maturation of the myeloid series of the bone marrow . . . Arrest of maturation was evidenced by almost complete absence of segmented white blood cells in the bone marrow. These statements are contributing some facts about agranulocytosis but they do not advance a plausible explanation for its pathogenesis.

The patient whose case was reported above did not take any substance known to cause agranulocytosis; thorough investigation in this direction was absolutely negative and after the first attack of agranulocytosis the patient was given to understand that even one tablet of aspirin or aminopyrine might cause severe reactions. Therefore, this case must be considered a case of idiopathic agranulocytosis and for this reason it seems extremely fit to be used for a general explanation of the origin and development of granulocytopenia.

It was Aschoff who created the reticulo-endothelial system, while Eppinger (7) enriched the knowledge on hepatolienal diseases. In both instances the connection between liver and spleen is of greatest importance, here from a physiologic, there from a clinical point of view.

Among other organs, there belongs to the reticulo-endothelial system also the bone marrow having like the spleen reticular and endothelial cells. The liver, like the pancreas, can be considered a double organ containing the specific epithelial liver cell and the endothelial cell interspersed with Kupfer's star cells. Supposing these endothelial cells represent a protective system for the epithelial liver cell and also are of great importance in producing immune bodies, and in destroying toxins and poisons—then, the question arises what will happen if this protective system is overburdened.

With great probability it can be assumed that this situation may arise by diseases of the liver leaving permanent cell damage, by after effects of severe infections and of toxic or poisonous substances. In case of severe infection, and here the reported case is concerned, the spleen beside the liver endothelium offers the main defense.

If the protective system must partly give in to the severity of the infection, then, the body is exposed to the detrimental sequelae of the toxins. Thus, there will develop an insufficiency of the liver endothelium including the star cells, and of the spleen endothelium. Considered systemically, the bone marrow too must be affected and this could result in damages to it which otherwise would be warded off by the liver and the spleen apparently having the task of protecting the all important bone marrow and directing its function.

It is the endothelial cell that connects the three organs involved and the hitherto existing designations not permitting to fully explain the described actions, the endothelium of liver, spleen and bone marrow are to be combined to the hepato-endothelial system—the HNS.

This new conception seems to form a foundation for the pathogenesis of agranulocytosis. First, there must occur a severe damage to the HNS leading, under certain conditions to the dreaded complication. As an organ of the system, the liver is of utmost importance. If, on account of chronic infection the liver endothelium fails as protector to the specific epithelial liver cell, then the whole liver parenchyma will be slowly transformed into a state of dysfunction.

Many reports on agranulocytosis describe this condition from subicterus to severe icterus (8). The spleen is always found to be more or less enlarged. Thus, the participation of the HNS seems to be assured. The systemic connection of the bone marrow offering in autopsies most severe changes even aplasia seems to cause the symptoms in the long bones, sternum and perhaps the skull.

In the described case, the chronic infection has probably started from the case of scarlatina the patient was subjected to at the age of four years. It was followed by polyarthritis.

Whether or not this is considered to have been scarlatinous rheumatism, since then, the patient had to complain of *rheumatism* leading, from time to time, especially up to the age of 20 years, to febrile relapses often of very severe character. Perhaps it was a chronic streptococcus infection, yet there was never submitted bacteriologic proof.

The permanent overfunction of the HNS apparently caused severe icterus at the age of 24 years leaving the patient with permanent liver cell damage.

Based on these deliberations and on the success of the first treatment with pronor this injection was used again and with gratifying result. Pronor consists of auto-substances, namely extracts from liver, spleen and pancreas which evidently exert a specific

influence on leukocytes. By administering relatively small amounts of pronor in the reported case, it took nine days to double the amount of leukocytes and to decrease relative lymphocytosis from 83 percent to 55 percent.

At the same time, the condition of the liver improved so much as to reduce the enlargement to nearly normal and to decrease the size of the swollen spleen and its soreness.

The long bones and the sternum became less painful. From May 4, pronor was given only once daily and further improvement of the differential count was decreased.

Within four days granulocytes only increased by 1 percent while lymphocytes only went down by 3 percent. When the patient resumed her daily work, she started to complain again of pain in her long bones. On May 16, the general condition—apart from the aforementioned symptoms, was ratner satisfactory yet the differential count proved that the small supply of auto-substances had not been enough to keep up the equilibrium among all factors involved. A renewed swelling of the left lobe of the liver was found with a relapse in the differential count—again the connection between the liver condition and the white blood count asserted itself!

Do these facts not allow to think of a close connection between the HNS and the white blood count? Should it be impossible that the leukocytes would be directed and protected by a system forced to use these cells to accomplish a complex task?

If this supposition were to be affirmed agranulocytosis were a symptom only pointing to the fact of chronic, latent but virulent infection, e. g., by spiroch, pallid, or streptococci.

Thus insufficiency of the HNS develops, partly depriving the bone marrow of its protection and direction.

If such a chronically ill patient is subjected to acute infection, e. g., diphtheria or grippe, or he is exposed to x-rays, or given substances such as thiouracil or containing the benzol ring then detrimental consequences are taking place because the depoisoning and protective system of the HNS is already weakened: Severe damage of the bone marrow is brought about removing granulocytes more or less completely from the blood count—the symptom *agranulocytosis* has appeared! This explains why experiments intended to produce agranulocytosis by giving large amounts of aminopyrine were doomed to failure. Severe insufficiency of the HNS is—absolutely seen—rarely encountered.

In a case of agranulocytosis a specific treatment, e. g., with pronor is started, then, these auto-substances take over the task of the weakened HNS. The offered case seems to speak for this contention because the first symptom of successful treatment was the obvious improvement of the general condition; the malaise cleared up rapidly although the blood count followed suit only 24 hours later.

After three more days, there was an objective decrease in the size of the liver but with less supply of auto-substances the general condition of the patient became slightly worse again, the liver expanded in size and accordingly the lymphocytes slightly increased. Considering the thorough observation of this rare case that can be accepted as a natural, physiologic experiment there seems to be sufficient reason to assume a specific connection between the endothelium of liver, spleen and bone marrow—the HNS—and the white blood count.

It shall be added here that there is the possibility of creating a parallel for the red blood count by combining the epithelial parts of the stomach, liver, pancreas and duodenum to the hepato-epithelial system—the HPS.

Summary

A report is given on a relapse of a case of agranulocytosis. Therapy only consisted of injections containing extracts from liver, spleen and pancreas. The blood count showed a remarkable increase in leukocytes and granulocytes within five days while subjectively the patient fully improved within 48 hours.

The new therapy is compared with treatment of injections of pentnucleotide.

The endothelial cells of liver, spleen and bone marrow are combined to the hepato-endothelial system—the HNS, and it is supposed that it is directing the white blood count.

The development of the disease called agranulocytosis is attributed to an insufficiency of the HNS without which a toxic damage of the bone marrow cannot take place. Accordingly, agranulocytosis is a symptom of disease only which can be removed by supply of proper auto-substances. In order to avoid development of agranulocytosis insufficiency of the HNS must be treated.

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Robert William Taylor was born in England in 1842. He came to America as a boy, studied pharmacy and then medicine. He was professor of dermatology at P. and S. and at Vermont. He described a rare form of localized or partial atrophy of the skin, which is known as *Taylor's disease,* or idiopathic progressive atrophy of the skin.

DIFFERENTIAL DIAGNOSIS AND TREATMENT OF PARANASAL SINUSITIS

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The ability to recognize any deviation from the normal in the examination of a patient is important in all branches of medicine. This is especially so in nasal examinations where the diagnosis and subsequent treatments are based almost entirely upon the clinical findings at the first examination.

The normal functions of the nose consist of the preparation of the inspired air for the lower air passages by filtration, warming and humidification, together with the bacteriostatic property of the secretions and mucous sheath.

Filtration of the inspired air is accomplished by the vibrissae or hairs in the skin in the nasal vestibule and by the air passing over the large intranasal surface coated by a sticky secretion which entraps and subdues most foreign substances including bacteria.

The air is warmed by transfer of heat from the surface of the middle meatus and the turbinates where there is an abundant blood supply.

Humidification is accomplished by the moist action of sinus secretions and by the mucous sheath. Normally, the same membrane and mucous sheath which covers the intranasal surface, extends into and covers the walls of the sinuses, the eustachian tubes, the middle ear, the additus ad antrum, the cells of the mastoid, the pharynx, larynx, and bronchi, differing only histologically. All the surfaces of the above mentioned cavernous spaces are coated with mucous which is continuously being replenished by the mucous glands.

Portions of the middle meatus and middle turbinates and the maxillary sinuses are covered with minute cilia which are in constant motion in the normal nose sweeping secretions originating in the sinuses out into the middle meatus where it is conveyed in the direction of the choanae and upper pharynx. The mucous sheath acting as a protection covering for the cilia, is said to be renewed throughout the entire nose in about twenty minutes.

There is an astonishing abundance of fluid secretion from the glandular structure within the nose, sinuses and upper air passages. It was determined and published by Harold Hayes in 1925 that there is at least one quart of moisture produced in a twenty-four hour period in the average, normal upper air passages. This has been confirmed by Proetz of St. Louis and others in recent years.

The mucous covering of the upper respiratory tract and sinuses is highly resistant to the invasion of bacteria. The bacteria or other foreign substances are taken up by the mucous and conveyed through the air passages to the choanae and upper pharynx by action of the cilia. Upon reaching this area most of it is either harked up and spit out or swallowed. The mucous sheath is sufficiently acid to inhibit or kill the bacteria that it may come in contact with.

From a diagnostic standpoint, clinical inspection, blood examination, family and personal history are the most important features. Nasal smears are inconstant and therefore, less valuable than a blood smear. Frequent nasal smears may be necessary before a definite eosinophilia may be demonstrated.

When examining a patient with a suspected sinusitis, it is well to bear in mind that there are three clinically important types of sinus affections, any of which may be either acute or chronic. The first in importance, because of its frequency is the allergic type, the other two about equal in occurrence are the mixed and the bacterial types. It is extremely important therefore, that the rhinologist be able to differentiate between the types of sinusitis.

In the allergic nose the examiner will note the boggy, wet, pale pink appearance of the mucous membrane covering the turbinates. The edema of the mucosa decreases the amount of air space in the nasal passages, causing mouth breathing in many instances. Transillumination will show all sinuses clear. Radiograms are important in that they prove that no pus is contained within the sinuses.

Edema of the sinus mucosa is demonstrable by x-ray, but does not show the density of the shadow produced by empyema. This is an important point to remember when interpreting a radiogram of the sinuses. Nasal smears for microscopic study are disappointing in that they are frequently negative for the eosinophiles because of the sweeping action of the mucous and cilia in which the secretions are carried posteriorly at the rate of about ½ cm. per minute, with a complete change of secretion about every twenty minutes. A blood smear is the most dependable method for routine microscopic study.

An increase in eosinophiles occurs in all allergenic cases; some may be so numerous as to be termed eosinophilia, but in any case a sufficient increase is demonstrated to be of material assistance in making a diagnosis of nasal allergy, when added to the clinical symptoms already found. The clinical symptoms are the most important, the examination of blood smears for eosinophiles being confirmatory. Eosphinophilia is not an exclusive indication of allergy. Many times the writer has found active allergic cases with only an occasional eosinophile.

Inspection of the posterior wall of the pharynx will demonstrate a glistening, wet nodular surface, caused by a post nasal drip. This membrane is a very bright red in the mix type and in the bacterial type, but it is pink, glistening, and moist in the allergic cases. The nodules seen consist of lymphoid tissue and may be found in the tonsillar fossa in

post operative tonsillectomies as well as on the posterior wall of the pharynx in allergic patients.

Many times while taking the history in a sinus case we are told that the patient has had hay fever or asthma and that one or more of the patient's parents have had hay fever or asthma or some other allergic manifestation. It seems that allergic manifestations occur at an early age in those cases where the parents are both allergic, while it occurs later in life when only one parent is a subject of allergy.

In the chronic cases of allergic sinusitis, the presence of polyps may be found in the middle meatus extending from the ethmoid sinuses.

Polyps are often found in the maxillaries by x-ray examination. Nasal polyposis is one of the conclusive symptoms of allergic sinusitis. Pain is a very constant symptom. This is a pressure pain and is induced by the occlusion of the ostei of the sinuses from edema of the tissue. Swelling of sinus mucosa and of the nasal mucosa causes a damming up of secretions within the sinus.

There is usually some seepage from the sinuses, but not enough to prevent an over accumulation. It seems that the watery secretions from an allergic mucosa is more abundant than it is in a non-allergic nose. In many cases the middle turbinate lies close to the lateral wall of the nose and when the tissue covering it becomes edematous, it presses against the ostei and helps prevent free drainage from the sinuses emptying into the middle meatus.

The symptoms of bacterial sinusitis are, nasal congestion with the mucous membrane being a bright red. The turbinates as a rule are not nearly so edematous as is the case in allergy, nor does it have the waterlogged, saturated appearance of the latter. Pus is usually found in the middle meatus. As a rule there is no toxemia from retained pus within the sinus no matter how profuse it may be. The mucosa has so highly a protective quality that pus absorption is usually prevented.

Headaches from pressure within the sinus are the rule. The frontal and maxillary sinuses, when affected are sensitive to pressure from the examiner's fingers. Sticky, yellow secretions are found on the posterior wall of the pharynx. Trans-illumination of the frontals and maxillaries shows a dark shadow when pus in quantity is confined within the sinus cavity.

A radiogram will demonstrate the presence of pus within the sinus in most instances. In the bacterial type only one group of sinuses may be involved, whereas in allergic sinusitis all sinuses are usually involved. Allergic sinusitis is a local manifestation of a systemic condition, while bacterial sinusitis is a localized condition entirely.

The mixed type of sinusitis occurs in those cases where a bacterial invasion has been superimposed upon an allergic mucous membrane. The diagnosis is arrived at in this type of case by the presence of pus in the middle meatus together with the other symptoms of a bacterial invasion in a patient known to have had an allergic sinusitis immediately preceding the bacterial invasion.

One interesting feature is that when the bacterial involvement is at its height, the eosinophiles in the blood and in the nasal smear greatly diminish in number or entirely disappear, reoccurring as the infectious process subsides.

To properly treat a case of allergic sinusitis it is highly important that skin testing be done to determine the allergen or groups of allergins to which the patient has a sensitivity. In this respect it is usually conceded that dust is the most constant allergen found.

In most cases the patient is discovered to have a hypersensitivity to several foods and a few of the other inhalants also. Several allergists have suggested, in various articles on the subject, that in skin testing when a negative reaction to dust is obtained it is not necessary to continue the tests for other allergins, considering the case a non-allergic one.

This author does not agree with this theory. While dust is undoubtedly the most constant allergin, yet in some cases the sinusitis is due entirely to a sensitivity to foods or to some inhalants other than dust.

Perhaps the most highly controversial subject among allergists is the method of skin testing. The advocates of the scratch test advance the argument that their method is safer, in that the possibility of serum sickness or anaphylactic shock is eliminated, while in the intradermal method too many deaths from shock occur. The advocates of the intradermal method demand proof that this is so, and cite thousands of cases of intradermal skin testing with a questionable number of deaths caused by anaphylaxis.

A colleague of mine in the midwest connected with an allergy clinic made a survey of the histories of eight thousand patients, all of whom had been subjected to the intradermal tests. In no instance had there been a fatality and in only two cases had there been even a suspicion of possible shock. When talking with a well known allergist in New York about the possibility of anaphylaxis from the intradermal method, and while he believed that the scratch test method was safer he assured me that there had been only two fatalities reported from the intradermal test in the entire United States in 1946.

It is conceded by most allergists, that the scratch test is less accurate than the intradermal tests. It is my conclusion that we should use the intradermal method in preference to the scratch test method, except when testing children, or needle shy adults, or people who are known to have coronary disease or other heart affections.

Once the allergins have been determined the patient should be given a duplicate list of what they consist of, and should be instructed to eliminate from his diet all offending ingestants.

If a sensitivity to dust or other inhalants has been demonstrated, it is customary to desensitize the patient with subcutaneous injections of antigens of the same type. This is a very common procedure and need not be discussed at this time.

Local treatments consist in the use of nasal packs

containing glycerine. It is customary to add a small amount of argyrol to the glycerine although the efficacy of argyrol in allergic cases is doubtful.

The use of infra-red and of diathermy has been found beneficial in the elimination of pressure headaches. Nasal sprays containing ingredients which shrink the tissue are contraindicated. Nasal surgery, except where very large polypi exist, is a useless procedure. Smaller groups of polypi will disappear spontaneously after a few months abstinence from offending ingestants and from the subcutaneous injections of proper antigens.

In the light of our present knowledge nasal surgery has been the most disappointing of all surgical procedures. This has been due to the lack of knowledge generally of allergy of the sinuses. It has been the custom to exenterate the ethmoidal sinuses in an effort to eradicate the reformation of nasal polyps.

We now know that nasal polyps are symptomatic of nasal allergy and that surgery is a mistake. Removal of large polyps which occlude the nasal passages is good surgery, but exenteration of the ethmoidal sinuses will neither prevent the reoccurrence of polypi nor eradicate the existing allergy. This writer has had numerous cases of nasal allergy in which there occurred a spontaneous disappearance of nasal polypi following disensitizing injections of antigens and abstinence from sensitizing foods.

The following report is interesting in that respect:

> Justin Marsters, Kingsville, Tex., age 16, was brought in for examination by his mother, who was an intelligent, college graduate, and a subject of allergy. The boy gave a history of having blown or sneezed nasal polyps from his nose fifteen times over a period of several years and his mother corroborated his statement. At the time of examination he had both nasal passages partly filled with polyps.
>
> Intradermal tests gave a positive reaction to meats and dairy products. These were eliminated from his diet. Two years later his mother brought him back for a final check-up before his induction into the Armed Forces. His nose was entirely free of nasal polyps. After the war he returned for another check-up, and this doctor found him still free of nasal polyps.

In bacterial type sinusitis, surgery is frequently resorted to in the chronic cases. Empyema of the maxillaries will occasionally call for antrum puncture and lavage; and in rare instances it will be necessary to do a radical Caldwell-Luc.

Sometimes in empyema of the frontals it is necessary to do the Killian or similar surgery. Surgery of the sinuses is less extensively done than in years past. Chemotherapy has helped in decreasing the necessity for surgery.

Ninety percent or more of patients who have nasal sinusitis are definitely of the allergic type and are not benefited by nasal surgery. Probing of the frontal sinus is of no benefit and many times does actual harm.

Local use of sulfa drugs has been found to be detrimental to the cilia and mucous membrane. Besides in many instances prolonged use may establish a hypersensitivity. Local use of penicillin is condemned for the same reason.

Summary

1. A comprehensive knowledge of the clinical symptoms is necessary in making a differental diagnosis in sinus diseases and in the treatment of the same.
2. Allergic sinusitis is a local manifestation of a systemic condition.
3. Bacterial sinusitis is a localized condition entirely.
4. Surgery of the allergic nose is a useless procedure, with the exception of the removal of polypi which may be obstructing nasal breathing.
5. The topical use of either penicillin or sulfa drugs is to be discouraged in all types of nasal sinusitis.

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THE CHRONIC RUNNING EAR AND ITS CURE

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In doing a "complete physical", the internist may find a foul, discharging ear, of which the patient makes no mention. When queried about it, he often replies that he has had "lots of treatments", but that "there has been no improvement".

It is said that more papers have been written upon this subject than upon any other in medicine. Personally, this author doubts it. But writing papers will not cure any disease unless the reader employs its tenets. Contained in the following paragraphs is a planned outline of treatment which has been "sure fire" in a considerable number of patients during some 30 years of experience.

Cullom (1) reports that there are 140 million people in the United States. One can estimate 2,800,000 with this disease, with at least 20 percent being diagnosed as incurable, as they have been so advised by conscientious otologists. If such statistics

can be taken at face value, they indict a great group of "specialists" who need to be "advised" that chronic purulent otitis media can be cured in most instances either through surgical or medical means. Dr. Cullom thinks that practically all such persistent infections are based on chronic purulent sinusitis, and that sinus surgery will result in cure with little effort directed toward the ears. He blames the exanthemata in childhood and later, for much of this, and he is probably right.

However, knowing this does not help us any. What we need is a thorough painstaking diagnosis. Then a plan of management can be easily drawn which in at least 90 percent of all cases will be effective. Delayed or no healing will be found in patients whose general health is such that they do not recover; diabetes, for instance, or general tuberculosis with aural tuberculosis as a complication.

Some excellent reports are coming through relative to "cure" of various forms of tbc. by streptomycin, particularly in tuberculous meningitis, and it is hoped that it will do as much for tuberculosis of the middle ear and mastoid.

There are certain side reactions such as severe vertigo and deafness which may be serious. In about 10 percent of patients treated with large doses into the muscles (3 to 4 Gm. daily), there are vertigo, tinnitus and diminished or lost hearing. These are probably due to impurities retained during the manufacture of the drug, and should be "ironed out" soon. Recovery of the eighth nerve auditory function is the rule, at least in part, but the damage to the vestibular portion may be permanent, although it is compensated so that the patient no longer falls.

Since almost all aural infections enter by way of the eustachian tube from infected nasal mucous membrane, the competent physician will clear up the sinusitis by surgery or otherwise, while treating the otitis. This scarcely needs to be emphasized.

Necrosis of bone in the mastoid cells or middle ear must be removed surgically in any case where it is found or even suspected; for one cannot expect healing if it is present. Not infrequently, the ossicles, particularly the hammer or the anvil are necrotic, and no end of drops or powder or applied electricity can be expected to remove the condition. Ossiculectomy is a relatively simple surgical procedure, can be done under local anesthesia, if desirable, instead of general narcosis, and it gives ample space for the otologist to apply his plan of management.

Quite a few of the patients whom this author has examined to determine the cause of persisting chronic otorrhea, have had mastoidectomies, either the so-called "simple" type, or the "radical" which calls for complete reaming out of all mastoid cells and conversion of mastoid antrum and middle ear into one large cavity, with a "plastic" enlargement of the external auditory canal. Many of these seem to have been carefully operated upon, with removal of all the diseased bone, but one suspects that the postoperative care was not all that it should have been. Too often the surgeon "turns over the case" to a house surgeon or other member of the staff, "for P. O. care" and seldom sees his patient at all.

Not only is this bad psychology, but we cannot expect anyone to take an interest in the healing of the wound if it is "not my patient." Therefore, the operator should in all cases follow through and see to it that healing is obtained with a thin skin covering all areas and with closure of the eustachian tube to keep the patient from blowing his nose through his ears.

A poor result is seen when there is a thick scar filling the entire operated cavity, or partially filling it in the presence of granulations. Hearing is likely to be poor, the discharge foul, and the patient disgusted, and unhappy. In most instances this need not be if the postoperative care is constant and meticulous. The patient should be seen every day, if necessary, certainly during the first two weeks, whether in or out of the hospital.

To insure the attachment of skin to bone gauze, packing will be necessary until adherence is well established. Discharge from the wound is sure to be present since it is part of the healing process—the exudate of serum from the blood. Bacteria are sure to be present also, since one cannot maintain a sterile field no matter how rigid his technique—bacteria laden air will see to that. However, germ life can be kept to a minimum by the procedure about to be outlined. One should be careful to maintain *surgical cleanliness;* but he *cannot maintain a sterile field!*

This doctor has in mind, patient number 782,278 who was examined in the Vanderbilt Clinic, outpatient department of the Presbyterian Hospital, Columbia University Medical Center October 7, 1947. She said that the left ear had been running for 32 years, during which time various sporadic treatments had been undertaken at several clinics. Seeing little or no benefit, she was irregular in her visits to these centers, feeling quite positive that she could not be cured. Nevertheless, she put aside her prejudice and submitted to a radical operation on the left ear during October 1945. But this proved of little avail since she still had foul discharge. She again became indifferent, and made visits to the clinic "now and then," receiving drops, irrigations, etc. of indeterminate nature.

Examination disclosed a fairly good looking result in spite of pus in the hypotympanum and on the tympanic wall. Upon wiping with dry cotton, the skin looked as one usually sees it when good healing has taken place after radical mastoidectomy.

Knowing there must be some focus or area of infection, the head was moved in all directions, and finally you could see on the posterior wall of the radical cavity, a mass of red, foul granulations looking like a red raspberry. This moved freely and bled slightly when touched with a cotton-wound applicator. The area was immediately cauterized with a chromic acid bead, the detritus was curetted and underneath it was a small area of bare bone.

When this condition is found, it does not mean that we must declare that "dead bone is present". Bare bone is not always dead bone, it is merely uncovered bone from improper healing. Skin objects

to climbing over a hill, but if one can level the area off, new skin will form at the periphery and rapidly grow in toward the center, eventually covering it completely. In this case, that is what happened. After the leveling-off process was complete, the infection was readily controlled by blowing in the iodine-boric powder about to be described, and the condition went on to complete healing in a few days. It was as simple as that!

The procedure outlined previously (2) is carried out as follows:

The powder at hand is called "I-B Powder". This is made by the pharmacist according to rule.

Iodine crystals	grs. V
Potassium iodide	gn. ss
Alcohol (95 percent)	M XV

These agents are rubbed together in a mortar until thoroughly mixed. Then boric acid powder is added to oz. 1. The mixture is spread out on waxed paper and allowed to dry, during which time the alcohol evaporates, leaving behind fine flakes of powder which can be served to the otologist in a wide-mouth bottle. The iodine content is approximately one percent.

On the table there is a small bottle of chromic acid crystals. These must be so dry that they roll around in the bottle. If exposed to air, they promptly take up moisture, form a dark, sticky fluid and are useless. This is a very valuable cauterizing agent and is indispensable for aural work. Other medicaments, such as trichloracetic acid, have been used by this doctor but he finds the best results from chromic.

The ear is irrigated with saline or sodium water. Then it is thoroughly dried with cotton. One must enter every nook and cranny to make sure of a perfectly dry surface, otherwise results may be poor.

If there are granulations, one takes a copper applicator, a piece of small wrapping, copper wire will do, such as is used to bind stationery, then a bead of chromic is fused on the end of the wire. An alcohol lamp furnishes a sufficient flame, but the fusing is much more difficult than it sounds until one gets the knack of it. If the wire is too hot, the acid will catch fire and smoke and it is then useless.

If not hot enough the crystal will not catch on. When it does catch, it should be passed quickly into and out of the flame, not held there. Frequently it drops off just when it seems to be about ready; then one must start all over again.

The bead should be small, not larger than a grape seed. It is applied to the granulation until one sees a whitening, then it is withdrawn.

One should be careful not to cauterize an open fistula, that is, do not invade the labyrinthine wall where it may be dehiscent, due to disease or previous operation. In such cases there is usually a history of dizziness, either spontaneous or after irrigation, or even after sponging with a cotton-wound applicator.

The aural promontory may be dehiscent, or the open area may be in the region of a semicircular canal (the horizontal) near the oval window. It is doubtful whether cauterization should be used at all following the currently popular fenestration operation for the relief of progressive deafness.

One might quite readily induce a labyrinthitis with untold consequences. After cauterization, nothing should be put into the ear save a piece of sterile cotton. Inspection should be made on the following day, or by all means on the second following day. This expectant method should be pursued for at least one week. One then has obtained about all he can expect from the cauterization. It is, in fact, a substitute for curettement, but does not replace it entirely.

The result is sometimes simply amazing. The patient may come in with a dry ear after one such cauterization, the skin may promptly cover the area, and the patient may be pronounced *well*. Of course one may have several "bare areas", each of which will require separate attention.

It may or may not be necessary to blow the powder in after cauterization has done all that one expects of it. When an area is red, small and fairly smooth, the powder alone may induce healing. If not, dermatization can be encouraged by the use of scarlet red ointment on plain sterile gauze. It is surprising how this medicament actually makes skin grow! One or two applications may suffice.

Summary

1. Make a careful diagnosis of the aural condition by clinical examination, audiometer, x-ray, the turning and caloric tests, if deemed necessary, and an x-ray study of the nasal sinuses if these seem to be involved.

2. Here, as elsewhere, a comprehensive history taken from the patient or careful perusal of hospital and ambulatory records is highly important.

3. After all this has been done, proceed to destroy all excess granulations ("proud flesh" according to the old terminology) by cautery, curette or operation under local or general anesthesia. Quite often, no anesthesia is necessary.

4. Blow in a quantity of the I-B powder sufficient to cover the entire cavity. A thin veneer which you can see through is useless.

5. The powder will dissolve if there is still serum leakage. When it cakes or remains in situ, healing underneath is well under way.

6. Apply scarlet red salve to encourage dermatization, if this seems necessary.

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Frambesia tropica is known as *Charlouis's disease,* after M. Charlouis, whose original paper on his experiences with the disease appeared in 1881.

Editorials

Medical Men of Colonial America

Physicians and surgeons practising in our own century, in our own country, rarely find it necessary to look back at the men in medicine of our early colonial period. Herman Goodman, M. D., of New York City, in his unending hunt for contributors to the knowledge of dermatology, found names of persons interested in the art of inoculation as a mode of prevention of high mortality of smallpox. These persons lived in the original colonies which later made up the United States.

From time to time, facts and fancies regarding these men were compiled until sufficient material was gathered which promoted the preparation of a number of biographical articles. The first of these features highlighted the life of Samuel Bard, M. D., and was presented in the December issue of Medical Record.

Dr. Samuel Bard has Bard Hall and Bard College named for him. Hyde Park was his family country estate, and the church at Hyde Park was the recipient of his gift of land and his services as lay reader. Sam Bard was teacher and partner of Dr. David Hosack, owner of the Elgin Gardens, site of Rockefeller City.

Isaac Roosevelt, M. D. was a student of his partners, Bard and Hosack. Upon his retirement from medical practice in the city, Isaac Roosevelt adjourned to Hyde Park and began the family interest in the locale and its church. Another Roosevelt not so long since held these interests.

In the future, space permitting, this journal will publish biographical notes on other physicians representative of the Colonial American period. Persons residing in and about New York City and those of our readers visiting us should seek the streets of lower Manhattan named in the article on Dr. Bard. There is more than biography in these streets—there is history and romance.

Seek these streets and walk them with your thoughts on the great and the near great and sometimes the villains who trod them before and during the War of the Revolution. But when you walk those streets, when you read these articles recall that the population of New York City was but 12,000 before the Revolution! One skyscraper in New York tenants 12,000 today! Several square blocks of real estate then cost $7,000. Now, a scant 150 years later, the same several square blocks of real estate are worth seven billion dollars!

Present Status of the Fenestration Operation For Deafness

Not infrequently, a patient who becomes alarmed about progressive loss of hearing will ask the "family doctor" for advice concerning something she has read or heard concerning an "amazing new operation" for restoration. This is a most difficult matter for consultation, since "the experts" themselves are by no means agreed upon the final efficacy of a procedure which is still *sub judice*.

In certain types of deafness there is fixation of the stapes in the oval window due to some productive, osseous change. This does not allow for transmission of sound from the drum through the ossicles to the endolymph. Under normal conditions, the endolymph sets in motion little hair-like processes in the cochlear organ of Corti, and these impulses are transmitted to the auditory centers in the brain which interprets them as words or music, or simply noise.

A review of this fenestration or window resection operation is presented in a paper published in *The Laryngoscope*, April 1947 by Dr. Marvin Jones, surgeon, Manhattan Eye Ear and Throat Hospital, New York. It was read originally at a meeting of the ENT section at the N. Y. Academy of Medicine, February 1947. Dr. Jones was delegated to make a report on the so-called "Lempert fenestration" by the Committee on the Conservation of Hearing of the American Academy of Ophthalmology and Otolaryngology in 1944. This is the report.

Fenestration means making another window into the vestibule of the ear to by-pass the obstructed oval window, and thus allow sound to vibrate in the endolymph as above described. The fact that an incision is made within the auditory canal (endaural) instead of elsewhere has little to do with the ultimate outcome.

The procedure was first carried out in Europe several years ago by Holmgren of Norway and Sourdille of Nantes, France. Results were uncertain and the operation was not popularized, until Lempert of New York and other surgeons began to experiment with it in this country.

The classification used by Jones and co-workers is: 1. Ideal cases (comparatively rare); 2. A good risk (satisfactory and common); 3. A poor risk (possible recovery of some hearing); 4. Unsatisfactory. The latter to have three months to consider

a decision. *Otosclerosis,* so-called, that is deafness without degeneration of the auditory nerve, offers the best prognosis. It is usually binaural, but in any case one always operates upon the *worse* ear, seldom or never on both. Tests by tuning fork and audiometer show fair high tones, diminished low tones with increased bone conduction compared to air conduction.

Other points in diagnosis are: family history of hearing loss, tinnitus, and a drum membrane unusually transparent with a pink promontory shining through. But there is no such thing as a "typical case."

To be distinguished from otosclerosis is *nerve deafness.* Here there is high tone loss with rather constant low tone maintenance. Bone conduction is diminished, and hearing loss may be in one or both ears. Deafness following a "running ear" is not usually classified under either of these two types.

Whom shall we select for operation? This is of first importance and requires great knowledge and experience on the part of the surgeon who is to operate. Second, no one should undertake this exceedingly difficult procedure who is not rooted and grounded in the anatomy, physiology and pathology of the temporal bone, macroscopically and microscopically. Moreover, he must have had many hours of working on the cadaver, doing the operation over and over again. Even so, there is a type of mind and hand who can never learn to do the job well. The incompetent and poorly trained can wreck the procedure, bring the operation into disrepute, and ruin the patient's morale.

Deafened persons have three "outs": 1. Hearing aid; 2. Lip reading and sign language; and 3. Surgery. If they "talk it over" with anybody and everybody they will become so confused as to invite a mental and nervous decline. The good old dictum that in many counsellors there is no safety holds here as elsewhere in life. The general practitioner will be asked: "What shall I do, wear an aid or have an operation?" To answer either yes or no is likely to incriminate him. A salesman will almost certainly advise the purchase of an aid; but the conscientous surgeon may advise a "trial" only, allowing the patient to decide after wearing an aid for from three to six months. In any case, no surgeon dares to promise too much. The patient must understand that at the present time any operation is largely experimental. If the hearing is brought up to a level of 30 decibels, this is a good result for conversational level, that is for tuning fork tests by air, heard on the 512, 1024 and 2048. If this level is maintained for one year, the operation was successful; if for two years or more, it was a brilliant and "permanent" result.

Causes of failure are: 1. Bony regrowth about the new window, thus throwing the condition right back where it was before operation; 2. A faulty diagnosis before operation as to the probabilities; 3. Surgical accident at the table due to electrical, mechanical or personnel blunders; 4. Infection. Postoperative pus may be persistent due to bacterial invasion during or after operation in spite of every precaution. It may engender complete failure of hearing plus a foul, unpleasant constant and disgusting sequel.

Dr. Jones states that any surgeon who obtains 60 percent permanent improvement in hearing is getting excellent results from his efforts. Discouragement will come to all, but we have in fenestration a real "advance" in helping the hopelessly deafened to be partially restored to normal life and work. If patient and surgeon are both willing to "take a chance" after due deliberation and study, neither should indulge in self reproach; for each can say, "I did the best I could in a trying situation." Who can say more or do more than that?

Chronic Rheumatism

The term rheumatism embraces several forms of this disease, or varieties of a malady which pervades some parts of the world. It has been suggested that of the conditions grouped together under the name rheumatism, all are not true rheumatism but as it has not been decided definitely what this name exactly implies, this editorial will discuss briefly chronic rheumatism and mainly its etiology.

There is no country in which rheumatism is so rife as in Britain. It might be called in that island the industrial disease as it is the cause of more disability among workmen than any other disease. Statistics telling of its disabling effects among British workmen provides melancholy reading.

Recently, a discussion on the etiology of chronic rheumatism took place at a combined meeting of the Medicine and Physical Medicine section of the British Royal Society of Medicine, held in its building in London. Dr. Maurice Davidson presided. Dr. W. S. Copeman sketched its history, pointing out that the word "arthritis" was of ancient derivation, used by Galen and his successors to signify infections of the joints of the body. Rheumatism then was considered as the discharge of a catarrhal humor into the blood.

William Heberden in his *Commentaries on Diseases,* published in 1802, described osteoarthritis as a disease distinct from gout. The term "rheumatoid

arthritis" was coined by Sir Archibald Garrod while that of "rheumatic gout" was given to a disease in no way related to gout and not necessarily to rheumatism and sometimes called "rheumatic arthritis". The hypothesis of infection apparently first came into history in 1803 when Benjamin Rush cured a case of what appeared to be rheumatoid arthritis of the hip by the removal of an aching tooth. The late Sir William Wilcox and others popularized the theory of focal sepsis which perhaps was over-exploited.

Dr. Philip Ellman said that "chronic rheumatism" was an ambiguous and unscientific term and before discussing the etiology an attempt should be made to define and classify the conditions which were described as "chronic rheumatism". It was a disease of unknown etiology associated with morbidity rather than mortality and treated in the main almost with indifference by the medical profession. He was of the opinion that this attitude of defeatism in relation to rheumatic diseases was in the first instance the concern of the general physician working closely with the general practitioner rather than the ultra specialist. Dr. Ellman referred to the significance of the pituitary in relation to chronic rheumatism. He also touched upon the geographical distribution of rheumatism, describing it as a disease of temperate climates, but also said that faulty domestic heating and ventilation was more potent than climate as a causative condition.

However, climate plays a part in causing and spreading rheumatism and defective heating and ventilation aggravates the situation.

In Britain both these causes are present. The weather is changeable and variable and domestic heating and ventilation is frequently defective. It seems that rheumatism to a large extent might be prevented and that with this end in view not only should domestic hygiene be promoted but the heating and ventilation of factories of every kind should be improved and kept up to a high standard. Prevention is better than treatment when the disease is acquired.

The Yale Plan Against Alcoholism

A letter bearing date of November 19, 1947 recently came to our desk from the National Committee For Education On Alcoholism, the New York office of which is in the Academy of Medicine Building at 2 East 103 Street.

This so-called Yale Plan is not a function of the University *per se*, but is headed by Dr. Howard W. Haggard, president of the group, and by E. M. Jellinek, Sc. D., chairman. Other names taken from a long list on the Advisory Board are: Marion B. Kenworthy, S. Bernard Wortis, Karl A. Menninger, Florence Powdermaker, George S. Stevenson, Edwin G. Zabriskie *et al.* There are many other physicians, and several nationally known non-medical persons on the board. With the possible exception of Alcoholics Anonymous, there seems to have been no considerable number of people who have formed groups for the investigation, study and recommendation of measures of control of chronic alcoholism.

We are still, mentally, in the state of the medievalists who so shamefully mistreated the insane. Doctors know that an alcoholic is an ill person, but because he is a nuisance and calls us at all hours to relieve him of self-inflicted disease, we do not like to treat him. Most hospitals will not take such a patient, and "the Law" regards him as a moral delinquent who cannot be reformed.

Scientists at Yale and their co-laborers have proven that alcoholism is an illness, that the habitué can be rehabilitated, and that he may resume his place as a useful member of society.

These conclusions have come from a study of statistics as well as from actual clinical experience. We are told that 60 million adults in the U. S. drink "in moderation", whatever that means: that 4 million of these frequently get into trouble, and that some 2 million need medical, psychiatric and social help. These victims are maladjusted socially, lose jobs, ruin family economics, set a dreadful example to the young, and clog the work of public agencies, such as courts, and jails.

It was indeed a sad day for humanity when it was discovered that imbibing alcohol gives a sense of euphoria, and a means of "escape" from realities. We assume that men began the drinking habit, but during the past few years they have been rivalled by women, the debauchery and downfall of whom is a cause for deep regret among male drinkers themselves. The drinking age is said to be between 30 and 55, but casual observation leads one to believe that it begins in the 'teen age,—the smart age, when health is bountiful, and youth has so much of it that one can be prodigal in throwing it away. Precept and example on the part of older persons might do and could do much to show up the foolishness of overdrinking at any age.

Up to now, our way of dealing with the problem through high license, prohibition, taxation, and punishment has been utterly futile. In the Committee's language such procedures are "expensive, barbaric, and do not rehabilitate or prevent".

It seems to this writer that even with this new *plan* not enough stress is laid upon prevention. If we are to look upon alcoholism as a disease, which it certainly is, why not apply methods of disease

prevention as we do against the infections? The reason probably is that we still wish to drink whenever and wherever the urge is upon us, and wish to preserve our constitutional and individual rights.

And there's the rub! What is "moderation" for one person may spell ruin for another, because we all differ so greatly in our responses.

The Yale Plan deals with chronic alcoholism, and is asking for funds to carry on this work. It has determined certain facts which help to set up a formula for the amelioration or possibly the abolition of this social problem, but, perhaps, it overidealizes or overrates its ability to do this thoroughly. However, the "step" is at least just that, if nothing more, and even a step may be set down as progress.

The Committee is working to set up "Information Centers on Alcoholism" where an alcoholic or his family can go for information and assistance. That is item number one. The second item goes beyond this and undertakes to organize free clinics "where sufferers from alcoholism can be treated and rehabilitated." The sponsors say that results to date are spectacular.

In some twenty-five cities in the United States, local committees for "education on Alcoholism have been formed, and these have established centers where a scientific coordinated attack can be made on the problem and looked upon as a community disease. The National Committee confesses that it is neither wet nor dry. Its aims are scientific, practical, educational and humanitarian.

Calls for help from individuals and communities are coming in volume, and they are, of course, far in excess of the machinery which hopes to handle them. That is all well and good. However, a word of caution is in order against over-enthusiasm which might wreck the enterprise while it is still aborning. It is so very easy to wax wildly over social disorders of all kinds, and Alcoholism is the acme of this zealous quest. We are all too aware of the problem and of the need for social readjustment.

Infectious Jaundice

During 1942, a large number of United States troops contracted jaundice a few weeks after being immunized by yellow fever vaccine, which contained a small quantity of human serum. Study of the disease followed, although progress was hampered because human volunteers had to be used in all experimental work and the supply was limited.

Experimental and epidemiological evidence afford a fairly satisfactory account of this form of jaundice. Moreover, the evidence is somewhat indefinite and until a method for laboratory study of the virus has been devised, a correct description of this disease will be lacking.

According to F. M. Burnet, M. D., F. R. S., professor of experimental medicine, Melbourne University, gave an account in a lecture delivered in 1945 which he believed to be approximately correct. He said that catarrhal jaundice, infectious hepatitis and inoculation jaundice are alternative names for a low grade infection of the liver, produced by a virus or a group of related viruses, probably spontaneously spread by the intestinal route, but thinks that it is possible that droplet infection may cause some cases.

He pointed out that it was quite possible for blood taken from a seemingly healthy donor to contain active virus but experience suggested very strongly that injection of this blood in a susceptible human subject will bring about infection only when given in very small amounts. In spite of the enormous amounts of human blood and serum which has been employed in the treatment of shock and hemorrhage in recent years, there are scarcely any reports of infectious jaundice following such transfusions. Reports, however, from venereal disease clinics in which epidemics of jaundice have occurred, show that these were clearly traceable to the accidental inoculation of minute amounts of blood from one patient to another. Other reliable stories of a similar nature have been reported.

The author explains this apparent paradox thus, that large amounts of blood or serum are usually harmless, while very small quantities may be potent in producing infection which is due to the coexistence of circulating antibody with the virus in the blood stream. Other examples were given of the manner by which infectious jaundice may be produced and judging from these many occurrences it was certain that in this country, at any rate, and probably in all communities a large proportion of people become infected at one time or another with the virus of infectious jaundice.

Infectious jaundice is a fairly common disease in this country and in some other countries and the great wars, with their influence on diet and the character of the food, has no doubt aggravated the situation. In this connection the personal equation must be considered, that all human beings are not alike in respect to sensitiveness or hypersensitiveness.

What is one man's meat is another man's poison is as true as when first spoken. Food is at fault, but the sensitiveness or hypersensitiveness of the individual is equally so.

DAVID HOSACK, M. D. (1769-1835)

HERMAN GOODMAN, M. D.
New York, N. Y.

Dr. David Hosack was a brilliant physician and surgeon, teacher, and organizer in medical and social matters of Old New York—when Fifth Avenue was unknown and 50th Street was three and one half miles from town.

He played a great part in his own time, and is responsible for the modern metropolis we call New York City. His purchase and then sale of the common land lots became in part and in time the plot of ground we call Rockefeller or Radio City. What was worth no more than seven thousand dollars in 1811, has become worth as many hundreds of millions in 1947. The northern section of his Elgin Botanical Garden alone pays more than three million in lease rent.

David Hosack played a gallant part in his own period of post-Revolutionary War New York City. His efforts to create a botanical garden for medicinals led in an almost direct manner to vital changes in the cultural, medical, and indeed financial history of the metropolis on the Hudson. The twenty acres he purchased for Elgin Garden became in time and in part the site of Radio City! No memorial marks this man by name of street, neighborhood or park in New York City.

David Hosack was born in New York City, August 31, 1769. He was the first child of Alexander Hosack, native of Elgin, Murrayshire, Scotland. He came to the New World in 1758 and married Jane Arden, daughter of merchant Francis Arden. The youthful David Hosack studied at Newark, N. J., under the Rev. Dr. Alexander McWhorter; received instruction in Greek from Dr. Peter Wilson of Hackensack, N. J.; and French lessons and classic instruction from James Hardie. He matriculated at Columbia College, but in his junior year began medical study under Dr. Richard Bayley (1745-1801) New York City surgeon; one time pupil of William Hunter; lecturer in anatomy at New York Hospital (1758) and professor of anatomy at Columbia College (1796).

David Hosack went to Princeton, N. J., for his senior year and was awarded his B. A. degree in 1789. He resumed his medical studies in New York, and in the fall of 1790 went to Philadelphia, earning his medical degree in 1791 from the University of Pennsylvania. His thesis was 'On Cholera morbus.' Immediately on graduation, Dr. Hosack consummated the first of his three marriages. He began practice of medicine in Alexandria, Va., where he had the opportunity of evaluating the gardens of a colleague.

Despite success here, Dr. Hosack went to New York City in 1792 intending to practice. Instead, making arrangements for the care of his family, off he went to Europe, studying medicine at Edinburgh, Scotland, 1793; and special instructions under leaders of the profession. He visited Elgin, birthplace of his father while in Scotland.

In London, 1794, Dr. Hosack devoted himself to hospital work and special instruction. During his sojourn abroad, Dr. Hosack evinced great interest in botany, and the botanical gardens. He devoted several hours daily to studies in botany, natural history and minerology. The collections he carried to America were the first large ones of minerals to reach its shores. He also brought with him duplicates of the herbarium of Linnaeus (Carl von Linne..... (1707-1778) Swedish botanist, author of system of naming plants).

David Hosack resumed medical practice in New York City in 1795 and soon numbered many distinguished persons, resident and visiting, as patients. First named office associate to treat his patients when Dr. Bard was in Hyde Park (1796) two years later the two physicians were partners. They were more than business friends. Dr. Bard had first come to know David Hosack during the latter's undergraduate days at Columbia College. There was some 25 years difference in their ages, but the two were and remained sincere friends.

Dr. Hosack having lost his first wife and child, married Mary Eddy. Five of their nine children survived.

Dr. Bard had fostered a garden at the New York Hospital and Dr. Hosack was given supervision of this project. Because of his great interest in botany, a place was found for him on the faculty of Columbia College by having Dr. Samuel Latham Mitchill (1764-1831) resign, February 10, 1795. Hosack was appointed and held the post until 1811. He also held the chair of materia medica beginning in 1796.

Unlike many in his profession, Dr. Hosack was a well trained surgeon and operated in his own practice and at the Almshouse. He gave a talk on Surgery of the Ancients in 1807, when he became professor of surgery and midwifery. He transferred to the chair of theory and practice of physic and clinical medicine after a few terms. In 1811, Hosack resigned from Columbia College upon being appointed professor of clinical medicine and materia medica at the College of Physicians and Surgeons; a post he held until 1826.

Dr. Hosack was president of the faculty of the Rutgers Medical School from 1826 to 1830 when the school was abandoned. This was his last formal teaching position. Dr. Hosack was an inspired teacher and much appreciated by his students. He brought the sickroom to his pupils in the classroom; and the student to the bedside of the ailing in the hospital.

Dr. Hosack was a founder of the College of Physicians and Surgeons of which he was also a trustee.

It was originally an organization independent of the medical department of Columbia College (1807). In 1811, the two institutions were merged, and in 1813, the faculty of the medical school of Columbia College was transferred to the College of Physicians and Surgeons. The amalgamation was at the suggestion of Dr. Hosack who was most interested in the fate of the Elgin Garden allocated by the State of New York for the benefit of the medical schools of the city. Hosack was professor of theory and practice of medicine. His friend and senior partner was president.

Dr. Hosack was co-editor of the American Medical and Philosophical Register from 1811 to 1814. The other editor was Dr. Samuel Latham Mitchill (1764-1831), practitioner, teacher, scientist, organizer, bon vivant.

John Wakefield Francis (1789-1861) an associate editor studied under Dr. Hosack after graduation from Columbia College (1809) and came to hold some of the popularity of his teacher. He was a famous obstetrician, teacher, organizer, one time candidate for nomination for presidency of the American Medical Association (1853), and founder of the New York Academy of Medicine. Dr. Hosack also became co-editor of the American Journal of Medical Sciences in 1827.

Dr. Bard's practice and his own excellence in medicine gave Dr. Hosack a tremendous reputation. He was accredited with special brilliance in the treatment of patients with yellow fever, recurring and very prevalent year after year in the city. Both Doctors Bard and Hosack were victims of the disease in the epidemic of 1798 neither having left the city but remaining to treat their patients.

In the three decades after 1795, Dr. Hosack was the master of the largest and most lucrative practice in the city. Dr. Bard was called when needed, but often did not reach the city in time to help. When Alexander Hamilton (1757-1804) lay dying, Dr. Bard was detained at Hyde Park. Dr. Hosack had attended the duel, had accompanied the seriously wounded Hamilton to the city, and was with him at the end.

Hamilton had been a patient of Dr. John Bard (1716-1799) and of Dr. Sam Bard. Hosack visited Burr (1756-1836) the day following the duel, and some years later paid for the trip to Europe of the discredited but acquitted for treason Burr.

Physicians and other notables from distant cities and indeed foreign countries visited Hosack when in New York. He carried on correspondence with many for a lifetime. De Witt Clinton (1769-1828) one time mayor of New York City and twice governor of the State was a friend. Hosack delivered the eulogy at his bier. John Henry Hobart (1775-1830) was another life long friend of Dr. Hosack. This theologian took an interest in every educational movement in the city. Hosack wrote biographies of Dr. Benjamin Rush (1745-1813) and Hugh Williamson (1735-1819), vice president of the College of Physicians and Surgeons (1808).

It should be recalled the population of New York in 1760 was about 14,000. This dropped to about 12,000 at the close of the Revolutionary War, and rose to about 30,000 before the turn of the century.

Dr. Isaac Roosevelt (1790-1863) grandson of a past president of New York Hospital, graduated from the College of Physicians and Surgeons in 1812. He became office associate to Dr. Hosack until 1820 when he retired to Hyde Park. In due time, he became a warden at Hyde Park Church, a post later held by his son James Roosevelt (1828-1900) and his grandson Franklin Delano Roosevelt.

Dr. Hosack was also preceptor to Frank Upton Johnston (died 1858) grandson of Dr. Samuel Bard.

Dr. David Hosack would have liked nothing better than to succeed his friend and partner, Dr. Samuel Bard as president of the College of Physicians and Surgeons. Dr. Bard, for what he regarded as good and sufficient reasons, retained the post. The matter led to temporary coolness between the two (1818).

The files of the New York Academy of Medicine have cards testifying to the authorship of numerous articles written by Dr. Hosack. The vaults and safes are depositories for his personal papers, notebooks, manuscripts, etc. These are priceless Americana. In addition to his practice and teaching, Dr. Hosack devoted himself energetically to civic improvement. He sponsored a 'Humane Society' for the care of poor debtors in jail. He provided for soup kitchens for the destitute. Interested in resuscitation from drowning, Dr. Hosack influenced the city authorities to provide life saving apparatus about the city.

The doctor sponsored medical care in ambulatory dispensaries; recommended pest house facilities at Bellevue Hospital; supported Jenner vaccination for smallpox. He was consulted in sanitary matters, particularly rules for quarantine, by the then Board of Health. He wrote, in 1820, on The Medical Police of New York City.

The name of Dr. David Hosack is found in many petitions filed in Albany for assistance to the Public Library, to Columbia College, to New York Hospital, to New York Horticultural Society, and to New York Historical Society. He devoted himself to these organizations. He also was a leader in seeking provision for extension and new buildings for Bellevue Hospital. He gave freely of his gifts, and his contributions to charities were heavy.

Elgin Garden

Most brief mention is given here to one of the most fascinating tales of New York City. Dr. David Hosack, because of his great interest in botany fostered by his trip abroad and the example of his preceptor and senior medical partner, Dr. Samuel Bard had been named professor of Botany at Columbia College in 1795. These two were the most popular practitioners of medicine in the city with the most lucrative practice among the distinguished citizens. They were most earnest in procuring a botanical garden for instruction of their students, and for provision of medicinals and herbs for their patients. Their efforts to have the civic authorities, the State legislature, and the local school trustees allocate funds for the project failed.

Dr. Hosack on his own purchased land for the purpose. Quoting from 'A Statement of Facts relative to the establishment and progress of the Elgin Botanic Garden' by David Hosack, M. D., 1811:

"Accordingly in the following year, 1801, I purchased of the corporation of the city of New York twenty acres of ground situated on the Middle road, between Bloomingdale and Kingsbridge, and distant from the city about three miles and a half. The view from the most elevated part of the ground is variegated and extensive, and the soil itself of that diversified nature as to be particularly adapted to the cultivation of a great variety of vegetable production.

"At a considerable expense, the establishment was inclosed by a well constructed stone wall; the ground although exceedingly rough, cleared and put in a state of promising cultivation, arranged in a manner the best adapted to the different kinds of vegetables, and planted agreeably to the most approved stile of ornamental gardening: a conservatory for the preservation of the more hardy green house plants was also erected.

"As a primary object of attention in this establishment was to collect and cultivate the native plants of this country, especially such as possess medicinal properties, or are otherwise useful, among others, such gardeners as were practically acquainted with our indigenous productions, were employed to procure them, and by the distinguished liberality of several scientific gentlemen in this country, I had in cultivation at the commencement of 1805, nearly fifteen hundred American plants, besides a considerable number of rare and valuable exotics.

"The expenses necessary to effect these improvements, especially in the cultivation and arrangement of the grounds, and in erecting the buildings, being greater than I had anticipated, and being somewhat apprehensive that I should have to delay such further improvements as were considered essentially necessary, I made application to the legislature, requesting the loan of a sum of money for the purpose of enabling me to execute the plan I had projected, and to maintain the establishment."

Dr. Hosack devotes 50 pages "correcting three errors: first, that the ground appropriated to the use of the Botanic Garden was not originally purchased by me, but gratuitously granted by an act of the corporation of this city; secondly, that I have received an annual salary from the Legislature of this state, for the maintenance of the establishment; and thirdly, that the valuation of the property made by the appraisers appointed by the Land Office, had been ratified by that board to the full amount of the appraisement presented."

Now before we go on: Elgin, it may be recalled, was the birthplace of Dr. David Hosack's father. Then, the plot of land had best be described to orientate the reader unacquainted with the geography of old New York. Hosack bought four plots of city land (Nos. 54, 55, 60 and 61) in all about twenty acres, or 256 city lots, extending from the present 47 to 51 Streets and from Middle Road (now represented by Fifth Avenue) westward to a line about 100 feet east of Albany Road (now represented by Sixth Avenue).

The deed was dated August 6, 1804. The four plots were conveyed to Dr. Hosack for $4,807.36 in money, and quit rent of sixteen bushels of good merchantable wheat to be paid every May 1 in kind, or its equivalent in gold or silver coins. This quit rent was paid as $285.71 in 1810. Dr. Hosack exchanged a plot of common grounds of five acres on 57th Street with the city for the city's right in the streets through the four plots. This seems very little money for so much land in what was to be the center of the City of New York! But, Dr. Hosack spent some $100,000 on the improvements. The northern section, now 50 to 51 Streets, was the site of green house and two hot houses fronting some 180 feet.

Addison Brown (1830-1918) one time judge of the U. S. District Court for Southern District of N. Y. was an ardent botanist. He was co-author with N. C. Britton of *Illustrated Flora of the Northern U. S., Canada, and the British Possessions,* 3 volumes, 1896-1898. He wrote: The Elgin Botanical Garden, its later history and relation to Columbia College, the New Hampshire Grants and the Treaty with Vermont in 1790. This book was published in 1908. Mr. Brown says: "The establishment was the first of its kind in New York State and was regarded as a marvel of the skill, zeal and munificence of Dr. David Hosack who had created it."

The history of the Elgin Garden, the various and sundry financial deals, the involved interplay between the medical department of Columbia College, the independent College of Physicians and Surgeons, and the merged institution are explained by Mr. Brown.

Dr. Hosack received after some delay about $75,000; being less by $28,000 the amount he had paid for the property, the buildings, the plants, and so on. He also had borrowed from his friends. The doctor and the Garden were not fully parted. The reader interested in the Elgin Garden through the century and more until it became the site (in part) of Radio City is referred to two short works by Clair Klein: Columbia and the Elgin Botanic Garden Property; and Radio City Towers Rise from the Elgin Botanic Garden appearing in the Columbia University Quarterly, December 1939; and February 1941.

One cannot forego the temptation to quote from *Doctor Bard of Hyde Park* by John Brett Langstaff, E. P. Dutton and Co., Inc., 1942. Dr. Bard had made his first attempts at a botanical garden on the grounds of the New York Hospital early in the 1790 decade. Now, 28 years later, the College of Physicians and Surgeons had offered the Green House Plants to the hospital and other city and upstate institutions. Sam Bard, Hosack and Mitchill "rode out to the high walled garden on the Middle Road to administer the last rites of scientific care to the botanical specimens which still remained faithful to their hopes . . .

" . . . although the land in which the botanic gar-

den had been planted was estimated at the time as worth hardly more than between $6000, and $8000, by the close of the century it had risen in value to as many millions. In fact, the sale of the block between 47 and 48 streets afforded the means for Columbia's expansion into a university. The remainder of the property was leased by Columbia at $3,300,000 a year for building the Rockefeller Center with the result that its assessed valuation in 1941 was $92,783,900."

Dr. Hosack lost his second wife and married for the third time. His wife was Magdalena Coster, widow of Henry A. Coster, and first cousin of Philip Hone. This was a most advantageous marriage for despite the sale of Elgin Garden, Dr. Hosack was in financial trouble, which wasn't a new thing to him.

After a half century of practice, educational and civic responsibility, Dr. Hosack retired. He was enabled to divide his time between the Coster Mansion in New York situated at 30 Street and First Avenue, and at Hyde Park. He entertained well; conducted his country estate in a most able manner making it a show place with its advances in agriculture, horticulture and animal husbandry. The doctor 'was a man of profuse expenditure' according to Dr. Francis, quoted by Brown. He made a deep gouge into the huge Coster fortune according to newspaper accounts.

Dr. David Hosack, while in residence for the winter in New York City, suffered a paralytic stroke affecting his right side, and his speech became slurred. He became comatose and died within a week, December 22, 1835. His remains were placed in the family vault in the Marble Cemetery on Second Street, near Second Avenue, New York City.

Alexander Eddy Hosack (1805-1871) son of David Hosack became a surgeon of great distinction. He was among the very first to utilize ether as an anesthetic, and was a pioneer in urologic surgery. He died at Newport, R. I., in March, 1871. His memoir of the Late David Hosack was published about 1861. The widow of Alexander Eddy Hosack bequeathed the sum of $70,000 for the main hall of the New York Academy of Medicine.

A proposal is repeated here to name one section of the private street of Radio City, Bard Walk; and another section, Hosack Walk. Truly, both these great gentlemen deserve this honor, or perhaps the present owners of the plot would consider naming the beautiful gardens gracing the property Elgin Garden!

18 East 89 Street

News Items

Cancer Pamphlet Presents Facts.—In *Facing the Facts About Cancer,* a 32-page Public Affairs Pamphlet prepared in cooperation with the American Cancer Society and the National Cancer Institute, Dallas Johnson reveals that cancer is one of the most curable of all major causes of death if detected early, but that we must look to research for a more effective method of diagnosis and cure.

Importance of regular examinations, the value of cancer detection centers, and the latest bulletins from the scientific battlefront are among the highlighted features.

Mrs. Johnson goes on to say in the pamphlet, "Science knows that if an answer to cancer is found, it will be by assembling the findings of many scientists . . . It will take the joint efforts of chemist and physicists, biologists and endocrinologists, pathologists and cytologists, to name just a few involved in the basic research of cancer."

It is brought out in this issue that as a result of atomic developments, radioactive chemicals from the uranium piles and from the cyclotron are now available to the world for cancer research. Whether radioactive chemicals will work selectively to destroy cancer cells is not yet known, but radioactive elements may still be a valuable scientific tool as tracers in the detection of cancer.

Governmental Professional Vacancies on the Increase.—A spot survey recently conducted by the Committee on Training of Public Health Personnel, United States Public Health Service, Federal Security Agency, illustrated that unfilled professional vacancies in State and local health departments of 12 states, total more than in 1945.

The Committee conducted the survey in April 1947 as a follow-up of a compilation made in July 1945. At that time, 38 State and 930 local health departments reported a total of 2,593 vacancies in 19 categories of full-time positions, and 2,000 positions being held for persons in the armed services.

States under observation were: California, Colorado, Georgia, Illinois, Kentucky, Louisiana, Massachusetts, Michigan, Minnesota, New York (exclusive of New York City), North Carolina and Texas.

Rosenstock Memorial Announces 1948 Award Winners.—The Rosenstock Memorial Foundation, Inc., a philanthropic Foundation for the purpose of fostering individual medical research without regard to race, color, creed or sex, has announced its three 1948 fellowship award winners. They are: Dr. Raymond S. Megibow, Mt. Sinai Hospital; Dr. Doris J. W. Escher, Montefiore Hospital; Dr. Roslyn Wiener, New York Hospital.

Illinois Opens Department of Clinical Science.—The University of Illinois has established a department of clinical science at the Institution's Chicago Professional Colleges, for the purpose of emphasizing the interdependence of the basic sciences and the practice and progress of clinical medicine.

Dr. A. C. Ivy, vice president of the University, will head this new department which seeks, by observation and other methods, to define and to advance knowledge regarding disease as it occurs in man.

Problems of research which are on the department's agenda embrace the entire science of medicine. Research will include:

1. Normal and pathological gastro-intestinal physiology, involving studies of enterogastrone in the treatment of peptic ulcer, cholecystokinin in the diagnosis of gall bladder disease, and the chemical structure of secretion, the hormone for the pancreas.

2. The biology of cancer, including studies of diagnostic tests for cancer, and growth promoting and growth inhibiting substances.

3. The vital function of the kidneys, involving studies of prolongation of life after bilateral removal of the kidneys.

4. The mechanisms and most effective means of producing analgesia, involving a search for analgesic drugs and a study of where analgesic drugs act.

Industrial Hygiene Reports Priorities Given To Industrial Health Departments.—Evidence found in *Industrial Hygiene* illustrates that top level management is granting high administrative priority to its health departments. This is proved in a survey now being completed by Dr. C. O. Sappington, industrial health consultant to the Industrial Hygiene Foundation.

Reviewing data from 287 groups covering a cross section of industry in 33 states, it has been shown that the medical department reported directly to top management in approximately 36 percent of all groups; the three divisions of health, safety and personnel relations were on a par administratively in approximately 40 percent of all groups; and the medical department had the final word with respect to health problems in an estimated 43 percent of all groups.

Beth Israel Hospital Trustees Give $50,000 to NYU-Bellevue Fund.—A gift of $50,000 to New York University-Bellevue Medical Center Fund, devoted to the relief of heart disease through the Center's Institute of Cardiovascular-Renal Disease, was presented by the Board of Trustees of Beth Israel Hospital, N. Y.

It will offer for 1949 three similar fellowships of $2,000 per annum renewable upon reapplication and favorable reconsideration for one additional year. The grants are limited to the support of individual medical research to be conducted in hospitals with medical school affiliations in any of the five boroughs of New York City. Fellowships may be granted either for full time or part time medical research.

Fellowships will be limited to those who apply within three years of the completion of interneship or residency (excluding time spent in military service) except that a recipient of the Fellowship may reapply for one renewal of the grant.

Applications must be endorsed by the director of the hospital where it is proposed that the research shall be conducted, and forwarded by the endorser to the Foundation at 42-16 West Street, Long Island City 1, New York by October 1, 1948.

Announcements of Grants will be made in December 1948, and the funds will then be turned over to the hospitals involved.

Blood Bank Added to Consolidated Edison's Medical Services.—A blood bank service which is available for employes, their wives and dependents, is now a part of Consolidated Edison's medical service in New York City.

Blood of the correct type and Rh factor is delivered when required by the Blood Bank of Queens County, Inc. The employe using the service is expected to replace the blood within 90 days, personally or by a substitute.

Medical care for Edison employes is an old story dating back to the year, 1902. Beginning with a few doctors and a limited service, the medical program kept expanding into today's all inclusive plan. Most of the costs are met by the company, with employes paying a share through their dues to the Mutual Aid Sick Benefit Fund.

The plan provides ward care in one of 21 affiliated hospitals in the four boroughs of New York City, as well as the services of associated physicians or surgeons. Employes may ask for the doctor of their choice.

The Public Health Service Funds Equals Largest Lump Outlay.—As released from the Federal Security Agency, a million and a half dollars—the largest grant of Public Health Service funds ever to be given at one time—was awarded recently to a total of 64 colleges, research laboratories, and public health institutions throughout the country by the National Advisory Cancer Council of the National Cancer Institute, Bethesda, Md.

This council awarded twenty-six medical schools $593, 130 for the improvement of cancer teaching; action on 12 requests from dental schools for the teaching of diagnosis of oral cancer was postponed.

Grants totaling $132,645 for cancer control projects ranging from $7,670 given to the University of Tennessee College of Medicine, Memphis, for a cancer tissue diagnosis service and tumor registry; $30,000 to Memorial Hospital, New York City for cancer pathology and medical training. Memorial hospital also received more than $100,000 for a total of five research projects, constituting the largest research grant given a single institution by the Council.

The first substantial construction grant ever given by the Council went to the Roscoe B. Jackson Memorial Laboratory in Bar Harbor, Me., for the rebuilding of the laboratory, destroyed in the disastrous Maine forest fire of a month ago. This was

for $250,000 and was contingent on the securing of further funds from other sources to complete the building, which will cost an estimated $650,000.

Disinfection of Air Research Held at Johns Hopkins.—Effective engineering techniques for the disinfection of air are available, Dr. Alexander Langmuir, associate professor of epidemiology, Johns Hopkins University, revealed in *Health News.*

The stipulated techniques are useful in preventing the spread of disease in a few limited environments where airborne infection is an important mode of transmission, for example, surgical operating rooms, pediatric and contagious wards, and research laboratories where agents of human disease are under investigation.

Dr. Langmuir contested that controlled studies in other environments such as schools and institutions, military and naval barracks, and sanatoria and mental hospitals, offer the best prospects for the logical extension of air sanitation.

In conclusion he expressed the belief that an equal amount of effort should be placed on a new approach, and better methods for the control of contact infections rather than to rely on air sanitation as the solution to our problems.

Civil Service Sets Examinations for Mental Hygiene Positions.—In a move to fill 49 vacancies for occupational instructors in New York State's mental institutions, a State Civil Service examination for that position was given last month. Also an examination was posted at the same time for senior pathologist.

Occupational instructors appointed from the list established by this examination will teach therapeutic arts and crafts to the mentally ill, mentally defective and epileptic patients. Such arts and crafts may include weaving, needlework, printing, bookbinding, wood and metal working, or clay modeling, among others.

Hebrew Medical Journal Celebrates Twentieth Anniversary.—*Harofe Haivri, The Hebrew Medical Journal,* a semi-annual bilingual publication is now in its twentieth year of publication. This journal, edited by Moses Einhorn, M. D., presents its original articles summarized in English to make them available to those persons who are unable to read Hebrew.

The fall issue of the magazine highlights the following subjects: "The Importance of the Rh Factor in Clinical Medicine" by Philip Levine, M. D., and "Pharmacology and Toxicology of Streptomycin" by Ernst Pick, M. D.

The section on Palestine and Health contains the following articles: "The Contribution of Bacteriologists for the Control of Infectious Diseases in Palestine" by L. Olitzki, M. D. of the Hebrew University; "The Present Status of Tuberculosis in Palestine" by A. Wolowelsky, M. D. and "Plastic Surgery in Palestine" by Ernst Wodak, M. D.

Under the heading of Historical Medicine Dr. Leon Nemoy of Yale University writes on the great philosopher and physician of the 13th century—Ibn Kammuna. Dr. Yom-Tov Levinsky discusses in his article on Folklore Medicine, the legends surrounding frogs and spiders as healing agents.

The editorial office of *The Hebrew Medical Journal,* 983 Park Avenue, New York 28, will be glad to furnish any further information.

Up-To-Date VA News.—F. R. Kerr, assistant administrator for VA's Special Services reports that the average patient in a Veterans Administration hospital spends about one dollar more per month in his hospital's canteen than he did in January, 1947. Per capita sales in VA canteens averaged $6.26 during September—$1.04 higher than the $5.22 average in January.

Sixty-six percent of the average patient's $6.26 went for retail items such as cigarettes, gifts and the like; 23 percent was spent for candy bars, ice cream, soft drinks and other edibles; the remaining 11 percent was divided among canteen services such as cleaning and pressing, and haircuts.

An increase of 905 women veteran patients in its hospitals during the past 15 months was reported in VA figures. In July 1946, VA had 1,130 women veteran patients, 788 in its own hospitals and 342 in non-VA hospitals under contract to provide additional beds. In October 1947, the latest date for which figures are available, women patients totalled 2,035, of whom 1,230 were in VA institutions and 805 in non-VA hospitals.

After December 31, 1947, prima facie evidence was not to be accepted as sufficient proof for veterans to establish service-connection for medical and dental treatment. On that date, veterans had had a full year after the President announced the end of hostilities in which to secure treatment on the presumption of service-connection based on prima facie evidence.

VA takes the position that this should have been ample time for emergency or clearly defined service-connected cases to have received treatment. However, the discontinuance of determination on prima facie evidence in no way denies vets any rights they are granted by law, nor does it limit services given those whose conditions are rated as service-connected.

VA awarded a $2,103,699 contract to the Del E. Webb Construction Co., Los Angeles, to construct a 100-bed, six story addition and several alterations to the VA Tuberculosis Hospital, Livermore, Calif. Ultra-violet germicidal lamps are to be installed in the dining hall, recreation room, and other areas where patients congregate, to kill disease carrying germs. Use of the lamps is the latest step in VA's program to reduce the chances of spreading tuberculosis in its TB hospitals.

Rodent ulcer of the face is known as *Jacob's Ulcer,* after Arthur Jacob, of Ireland, 1790-1874. He was especially proficient in anatomical studies and diseases of the eye.

LETTER FROM BRITAIN

(From Our Own Correspondent)

As far as medicine and medical men in Britain are, things seem about the same. We are still in a state of expectancy wondering what the day will bring forth. It is only a matter of waiting to see what will happen.

The people of the country generally appear to be in fairly good health despite rationing and other restrictions. There is one decided drawback which affects the medical profession intimately; that is, the shortage of nurses. Some hospitals have been compelled to close some wards on this account. It is a somewhat involved situation which would need plenty of paper and writing to explain adequately, that is if it could be explained clearly.

The question of how to deal with old people, who are so numerous that it has become a major problem, is one which must be grappled with at once. However, taking one consideration with another, life here is as healthy and contented as in any country and no doubt some of the most pressing problems will be solved soon, if not to the satisfaction of all, at any rate, to the satisfaction of many.

Aged and Chronic Sick

Sir Wilson Jameson, chief medical officer of the British Ministry of Health, illustrates in the *Ministry's Annual Report*, 1945-46, that the medical student in the past has received too much of his clinical instruction on patients acutely sick. This has made doctors unduly pessimistic as to what can be done for the chronically sick and aged.

Steiglitz in America remarked that the aged sick, simply because they are old, are too often denied modern treatment, though in fact old people tolerate surgery, for example, quite well and with adequate medical aid and good nursing often make surprising recoveries from serious injuries and illnesses. Dr. A. L. Sturdee calls for research into suitable accommodation for the aged and also into the early diagnosis and special treatment of those diseases which are not fatal but may lead to years of incapacity unless they receive proper treatment.

In Britain the situation as regards the aged is more serious than in the United States because the proportion of the aged to the general population is greater by far than in the United States, indeed greater than in any civilized country of the world.

Food in Britain

There is much misunderstanding as to the amount of food available to each person at the present time compared with that in pre-war times. Lord Addison admitted in the British House of Commons recently that food in Britain was less varied, attractive and palatable than the pre-war diet.

The total consumption of meat was about nine percent less than before the war. Fats were down by 29 percent, sugar by 26 percent, and eggs by 14 percent. On the other hand, the consumption of dairy produce, especially milk, was up by 30 percent, fish by 25 percent and flour (not withstanding bread rationing) by 10 percent. While diet was duller and less palatable than in the years preceding the war, it approximated more and more closely to the nutritional foundation upon which it should be based; dairy produce, vegetables and high extraction bread, rather a pedestrian diet far removed from the esthetic levels of a hotel grill room.

Lord Addison does not refer to the quality of the food nor to the fact that a large amount of canned food is eaten. This dairy and vegetable diet is well suited to the young (that is children), and to the old, but it is not satisfactory nor adapted to the nutritional needs of a man doing manual labor nor to most adults.

Climate and Rheumatism

Dr. Kenneth Stone in *Lancet*, May 24, refers to the effect of climate changes in producing and accentuating rheumatism. Dr. G. C. Pether, *Lancet*, June 7, points out that this subject calls for full investigation. He further points out that these painful effects are not due to changes of pressure alone, nor to changes of temperature alone, nor to changes of humidity alone. But these together perhaps with changes of atmospheric ionisation appear able to upset the delicate balance of those who are susceptible.

There is no doubt that the personal equation is an important factor in rheumatism as in most diseases. That rheumatism which in its various forms causes more disability among British workers than any disease certainly is a pressing reason why it should be studied as closely as possible in order to devise means for prevention.

The Chinese Medical Journal

The Chinese Medical Journal, founded in 1909, and suspended during the war, reappeared on May 1 of last year with a monthly issue of 5,000 copies. The magazine is printed in Chinese, and is published in Shanghai.

Medical Appointments in Britain

Dr. Alan Kekwick has been appointed to the London University Chair of Medicine, tenable at the Middlesex Hospital, London, as from October 1, 1946. Dr. A. S. Horning formerly of the permanent scientific staff at the Imperial Cancer Research Fund Laboratories, has been appointed to a London University readership in experimental pathology, tenable at Royal Cancer Hospital as from May 1, 1947.

Dr. F. C. Tompkins, lecturer at King's College, London, has been appointed to a London University readership in physical chemistry, tenable at Imperial College of Science and Technology, London as from October 1, 1947. Sir Lionel Whitby, Regius professor of Medicine in the University of Cambridge, has been elected Master of Downing College, Cambridge.

New Members of the Royal Society of Edinburgh

The following members of the medical profession were recently elected Fellows of the Royal Society of Edinburgh. Hamilton Bailey, F. R. C. S., George Howard Bell, M. D., Group Captain Gerald Struan Marshall, O. B. E., R. A. F. (Ret.) and George Ranken Tudhope, M. D.

Book Reviews

Occupational Dermatology

Occupational Diseases of the Skin. By LOUIS SCHWARTZ, M. D., medical director, United States Public Health Service, chief, dermatoses section; associated clinical professor of dermatology and syphilology, New York University; LOUIS TULIPAN, M. D., clinical professor of dermatology and syphilology, New York University, College of Medicine, New York City; SAMUEL PECK, M. D., dermatologist, Mt. Sinai Hospital, New York City. Second edition, thoroughly revised. 146 engraved illustrations and 1 colored plate. Philadelphia, Pa.: Lea & Febiger, 1947. Pp. 964. Price $12.50.

The price we pay for progress! This complete textbook on occupational dermatology is a revelation. Contact with, and the handling of almost any chemical may result in some form of dermatitis. Some chemicals have a specific effect. Other instances show some persons more susceptible than others.

As new chemicals are discovered and manufactured, such as D. D. T., a new set of conditions arise.

Excessive contact with almost any chemical may cause dermatological disturbances. Thus, in the chemical plants the majority of these conditions introduce themselves.

This is the principal reason for a second edition of this textbook—the presentation of these new findings about the older known chemicals.

But you don't have to work in a chemical factory to get an excellent case of dermatitis—you can be a beauty parlor operator—a barber or just wear a pair of dyed nylon stockings.

There too is the dermatitis caused from no specific chemical substance but from physical causes such as sunlight—electric burns, cold, or heat, or from the excessive alkalinity or acidity of various substances. Other causes are metallic slats, dyes, coal tar and its by-products, paints, photographic reagents.

Every practising physician encounters some form of skin disorder which may puzzle him. This textbook is invaluable in helping determine what the underlying factors may be—the pathology—the treatment and prophylactic measures to be taken.

Nutritional Rehabilitation

Rehabilitation Through Better Nutrition. University of Cincinnati Studies in Nutrition at the Hillman Hospital, Birmingham, Ala. By TOM D. SPIES, M. D., Department of Internal Medicine, University of Cincinnati College of Medicine. 50 Fig. Philadelphia and London: W. B. Saunders Co., 1947. Pp. 94. Price $4.00.

This monograph is based on study of nutritional deficiencies observed at the Hillman Hospital, Birmingham, Ala. It is concerned with the role of adequate nutritional therapy, playing successfully in a field of physical and mental rehabilitation.

Long term application of nutritional therapy makes it possible for the malnourished to regain health and to perform work. Nutritive failure has usually taken months or years to develop so it cannot be overcome quickly. From conception to death man is beset with impediments to good nutrition. Many conditions may arise to prevent adequate nutrition and he is subject to many diseases that interfere with their absorption and utilization. When for any reason deprivation of nutrients occurs, protective mechanisms within the body become protracted and when these protective mechanisms eventually fail, signs of dysfunction develop.

To rehabilitate such a person we must remove the causative factors and apply therapy that will not only correct but also restore their nutritive status. Primary malnutrition occurs as a result of failure over a period of time to eat a diet adequate in all essential nutrients. Secondary malnutrition occurs when disease interferes with the orderly processes of nutrition. It is not sufficient that a person has access to adequate food. It must be properly prepared and sufficient amounts of vitamins must be digested and absorbed before the body can utilize them.

If disease raises a barrier to proper assimilation and utilization of nutrients or the intake of these nutrients is insufficient for the body's needs all stabilizing forces fail and nutritional disaster is inevitable.

This study presents the means of determining the predisposing and precipitating factors concerned in the development of each nutritional disease. It reveals the panorama of nutritional deficiency, the procedures effective in correction and the follow-up plan to maintain adequate nutrition for well-being.

Uterine Contractions

Uterine Contractility in Pregnancy. A Study of the Contractions of Pregnancy and Labor under Normal and Experimental Conditions. By DOUGLAS P. MURPHY, M. D., assistant professor of obstetrics and gynecology and research associate in the Gynecean Hospital Institute of Gynecological Research, University of Pennsylvania. 64 illustrations. Philadelphia, London and Montreal: J. B. Lippincott Co., 1947. Pp. viii + 134. Price $5.00.

The author, who is assistant professor of obstetrics, University of Pennsylvania, has come to a number of informative conclusions based on 3200 individual records of uterine contractions taken during pregnancy, labor, and experimental conditions.

Lorand tocographs were used in this study. The mechanism and technique are clearly explained by text and illustrations. Many conclusions drawn have practical application. For example: Short labor usually was preceded by infrequent, rhythmic, long and strong contractions. The most efficient type of uterine contraction is produced by rarely more than 1-2 minims of posterior pituitary extract. Much space is devoted on the dosage and when and why one should use pituitary extract. Many popular superstitions regarding its use are exploded. The effect of estrogenic substances on the pregnant uterus was that it increases both uterine tonus and irritability, but the nature and degree of response were not predictable.

An interesting finding was that the anterior rotation of the posterior occiput does not depend on the

strength of uterine contractions nor upon the size of the infant. The configuration of the pelvis in all probability plays the important role in directing the rotation of the occiput. The effects of morphine on labor contractions is well presented.

Sixty-four illustrations enliven this excellent, scientific, scholarly, well-indexed volume.

Neurology

Fundamentals of Clinical Neurology. By H. Houston Merritt, M. D., professor of clinical neurology, College of Physicians and Surgeons, Columbia University; chief of division of neuropsychiatry, The Montefiore Hospital; Fred A. Mettler, M. D., Ph. D., associate professor of anatomy, College of Physicians and Surgeons, Columbia University; and Tracy Jackson Putnam, M. D., professor of neurology and neurological surgery, College of Physicians and Surgeons, Columbia University. Philadelphia and Toronto: The Blakiston Co., 1947. Pp. x + 289. Price $6.00.

The purpose of this book is to explain the essentials which a physician must know before tackling diseases of the nervous system. The book begins with the exposition of a primary examination of the patient. From this technique all special, alternative and controversial procedures have expunged with soundness and economy of time and effort.

The second part of the text then explains the basic anatomic arrangements of the various portions of the neuraxis and the fundamental principles of the manner in which they function, in order that the findings of the examination may be meaningful and profitably interpreted. Finally, this information is brought together, upon a pathologic and clinical basis, by an exposition of the most commonly encountered disorders of the neural system. Brief comments are made upon proved methods of treatment. Special diagnostic technics requiring surgical intervention or complex physiologic apparatus are not discussed. Since examination of the cerebrospinal fluid is routine, a chapter dealing with the interpretation of the findings in various diseases is included.

Ideally, every case record should include a complete, concise biography of the patient and his siblings, and a complete description of all aspects of his physical status, irrespective of his complaints. Actually, this ideal never has been reached and never will be. In practice, the study of the patient begins with a history of the patient's complaints and the chronologic development of the symptoms. From these, the physician forms a tentative list of diagnoses and directs his inquiries and examinations to narrow the possibilities.

The diagnosis of disease commonly is attained through the use of one or more of four different methods, the first of which is the intuitive recognition of a syndrome which is known empirically to be characteristic of a certain disorder. This requires wide experience with large numbers of clinical pictures of disease. It comes with long clinical experience.

The second method of diagnosis, especially valuable to the beginner and used by the expert, often without his conscious knowledge of going through the various steps, is the deductive method. From a consideration of all the manifestations of a disease, the physician forms a conception of the disorder in terms of physiology, hence the anatomic localization of the lesion, and, finally, by inference, of the pathologic process and its etiology. This deductive method is seen at its best in neurologic diagnosis, and many examples of its use will be found in succeeding pages. It is, however, seldom adequate without a certain amount of empirical experience.

A third means of arriving at a diagnosis is the demonstration of a pathognomic test, such as the presence of tubercle bacilli in the sputum, or the histologic appearance of a biopsy. This method seldom can be applied without the previous use of some orienting observation.

A fourth type of diagnosis is applicable chiefly to psychiatric disorders. It consists in attempting to put one's self in the patient's place, and feeling one's way into his psychologic processes. The neuroses are best understood in this manner. The examination of a patient with a disorder of the nervous system should include a general physical examination, a neurologic examination, and, finally, a psychiatric study.

This text on anatomic diagnosis is a valuable contribution to the clarification of the neurological problems in everyday practice. It reevaluates the anatomic base for every possible neurologic disorder encountered and offers the kind of rationale likely to be most effective in the management of these difficult clinical problems. The chapter on "the cerebrospinal Fluid," is especially illuminating with interpretations of every neurological disturbance in which spinal puncture is of clinical value.

Medicinal Text

A Textbook of Medicine. Edited by Russell L. Cecil, B. A., M. D., Sc. D., professor of clinical medicine, Cornell University Medical College; consulting physician, New York and Veterans' Hospitals. With assistance of Walsh McDermott, M. D., associate professor of medicine, Cornell University Medical College. Associate editor for *Diseases of the Nervous System:* Harold G. Wolff, M. D., associate professor of neurology, Cornell University Medical College. Seventh Edition. 244 illustrations. Philadelphia and London: W.. B. Saunders Co, 1947. 1730 pages. Price $10.00.

Since the first edition, published in 1927, others have appeared on an average of every three years. This means that the work has been kept "up to date", and is, therefore authoritative for 20 years and as of the moment.

Over 150 of America's "medical peerage" are contributors with their special knowledge under the guiding editorial hand of Dr. Cecil. Some 200 pages of new material have been added. This makes for an increased size and weight (6 pounds), but it has been thought best not to publish this text in two volumes for several reasons which need not be named here. However, it may be possible to use thinner paper when the shortage becomes replaced by the kind and quantity desired.

It is said that more copies of this work are sold yearly than is true of any other medical work. Something like 15,000 annually places it on the "best seller" list, and it is called for at libraries more

often than any other of its kind. Incidentally, this reviewer also was told that more are stolen!

Many new articles appear in this edition which have been omitted from former ones, for example: marihuana intoxication, porphyria, hypervitaminosis, and blackwater fever. Rewritten chapters deal with psittacosis, streptococcal and meningococcal infections, Tsutsugamushi fever, and rat bite fever. The list is a long one. It is interesting to note that the common cold leads out, quickly followed by influenza. Thus we see at once the importance of respiratory infections which are so often prodromal to chronic diseases elsewhere in the body.

In discussing rheumatic fever, for instance, Dr. Homer Swift admits and emphasizes infections of the sinuses, pharynx and tonsils as commonly seen some two or three weeks preceding the systemic and joint symptoms, with the Group A hemolytic streptococcus as the common offender. There are also other contributing causes, to be sure, but thus the importance of taking cultures from all nose and throat infected areas is readily stressed.

It is good to see well over 200 pages devoted to diseases of the mind and nervous system, especially the psychoneuroses which are now so much in evidence. Psychosomatic medicine also is well described.

Oral Diagnosis

Oral Diagnosis and Treatment. A Textbook for Students and Practitioners of Dentistry and Medicine. By SAMUEL CHARLES MILLER, D. D. S., associate professor in charge of the periodontia department, New York University College of Dentistry and thirty contributors. With an introduction by ALLEN T. NEWMAN, M. S., D. D. S., formerly dean, New York University College of Dentistry. Second edition. With 574 illustrations in black and white and 39 color plates. Philadelphia and Toronto: The Blakiston Co., 1946. Pp. xviii + 903. Price $10.00.

The first edition dedicated to the study of periodontia, appeared in 1936. Realizing that this greatly narrowed the field, the present printing has been expanded and enlarged to include a comprehensive view of oral bacteriology, interpretation of x-ray films, mouth infections and their relation to systemic diseases, extraoral fixation of fractures of the mandible (By Capt. C. V. Rault, D. D. S., U. S. Navy) and aerodontia.

Physicians will appreciate the chapter on "Head Pain," written by Richard J. Behan, M. D., Pittsburgh and his associate, B. J. Johnston, M. D. The distribution of headaches has a peculiar relation to anatomy, hence the cranial nerves are redescribed and the symptoms arising from irritation of them from whatever cause are well considered.

Diseases of the oral mucous membranes exclusive of neoplasms are studied and reported by George M. MacKee, M. D., and Anthony Cipollaro, M. D., of New York. In the light of manifestation of tropical diseases first seen in the mouths of returned soldiers, this is an important and timely subject.

Periodontitis is, in reality, a disease of the gums, an infection which may and does involve the upper and lower maxillae causing, among other pathological entities, a rarefying osteitis. It is exceedingly difficult to treat successfully, once the deep structures are involved.

It results not only in complete loss of all teeth, but in systemic disturbances usually ascribed to "focal infection." There is, of course, much more than this to the picture, and it is all well detailed in this book.

Obstetrics

Obstetrical Practice. By ALFRED C. BECK, M. D., professor of obstetrics and gynecology, Long Island College of Medicine; obstetrician and gynecologist-in-chief, Long Island College Hospital, Brooklyn. Fourth edition with more than 1000 illustrations. Baltimore, Md.: The William & Wilkins Co., 1947. Pp. viii + 966. Price $7.00.

It has been five years since a new addition of this valuable book has appeared. During this period many developments have taken place and some obsolete ideas placed in discard.

Of the most important of these are the application of antibiotic substance in puerperal infection and in the prevention of congenital syphilis.

Worth careful reading is the new chapter on analgesia and anesthesia. Safety and comfort of mother and child are given primary consideration.

Medicine In Review

A History of Medicine. By DOUGLAS GUTHRIE, M. D. With an introduction by SAMUEL C. HARVEY, M. D., WILLIAM H. CARMALT, professor of surgery, Yale University School of Medicine. With 72 plates. Philadelphia, London and Montreal: J. B. Lippincott Co., 1946. Pp. xvi + 448. Price $6.00.

This is a short, authoritative account of medicine which brings the subject up to date and which is a pleasure to read. There are several available good histories of medicine.

Withington's, "Medical History from the Earliest Times," which has been out of print for quite some time, carries the story from the beginning of the nineteenth century. Garrison's, "An Introduction to the History of Medicine" is a compendium of information. In German, there is "Geschichte der Medizin," of Meyer-Steineg and Sudhoff. In Italian, Castiglione has written the most recent of these general histories, "Storia della Medicina" and this has been translated into French and English.

Guthrie's book is a well written, compendious and scholarly narrative, particularly detailed in its treatment of the ancient philosophical schools of medicine and reveals more adequately than elsewhere the contributions of the leading scientists and practitioners, the fashions and sects in medicine throughout the ages, the geographical march of medicine from Greece to Salerno and Padua, and thence, by way of Leyden, to Britain and America, the epoch-making researches of Harvey and Claude Bernard, of Lister and of many another.

These are but a few of the topics which Dr. Guthrie fits into the mosaic of medical history, each detail as it falls into place revealing a steady and natural sequence.

As a guide to the reader, references have been added, giving the authorities from which Dr. Guthrie has drawn his information, and there is also a classified bibliography of works

SURGICAL DIGEST

By RICHARD A. LEONARDO, M. D.
Rochester, N. Y.

Penicillin and Intracranial Infections When such therapy is indicated, B. D. Wyke of Australia prefers repeated intraventicular injections of penicillin since he has frequently been unable to obtain therapeutically adequate concentrations of this antibiotic in the cerebrospinal fluid by ample hypodermic administration.

Pulmonary Embolism by Amniotic Fluid Gross and Benz report three fatal cases of this condition that occurred shortly after the onset of parturition. The predisposing factor to this condition is probably a communication between the amniotic cavity and the venous sinuses of the uterus. In fact, in one case, the amniotic fluid actually contained blood. In these cases, irreversible shock occurs abruptly and unexpectedly, and death follows soon afterwards. The diagnosis is difficult to make clinically, and even can be missed at autopsy unless the examiner keeps this possibility in mind. In the past, many of these deaths have been diagnosed mistakenly as obstetric shock, postpartum hemorrhage, etc.

Local Treatment of Burns C. H. Chase obtained favorable results in 500 ambulatory patients with burns by treating the lesions locally with a protein extract made from beef aorta. He and others feel that animal tissue forms an effective and physiological exchar over the burned area that is superior to that produced by tannic acid and similar agents. The protein can be applied in the form of a solution with saline, or it can be incorporated into an ointment base to which penicillin or a sulfa preparation also can be added. The method is still experimental, but seems worthy of further trial.

Acute Intussusception F. H. Magney analyzed 58 cases and found that vomiting was present in almost 90 percent of the cases, abdominal pains in 70 percent, bloody stools in 64 percent, palpable abdominal mass in 60 percent, and a palpable rectal mass in 20 percent. All of the patients he studied were infants or children, and almost all of them suffered with the ileocolic form of intussusception. Manual reduction, during open operation, was possible in all but a few of the patients; in these latter, some form of fixation operation was needed or else an intestinal resection with anastomosis of the healthy ends of the bowel. Recurrence of the intussusception occurred in two patients (4 percent). Mortality rate in the above cases was about 25 percent. However, these cases run from 1921 to 1945, and the operative mortality on the more recent cases is considerably less than this figure.

Vagotomy Accurate knowledge of the anatomy of the vagus nerves, above and below the diaphragm, is a prerequisite to the proper performance of this operation. The abdominal method is simpler for most surgeons inexperienced in thoracic surgery; however, the transthoracic approach through the resected left eighth rib gives a fine exposure. Over an inch of each vagus nerve must be excised, and all their fibres included, otherwise regeneration may occur. When successful, a decrease occurs in the acidity and in the total amount of gastric juice secreted, including the secretion of the gastric enzymes. However, since this operation abolishes only the psychic and nervous influences on gastric secretion, anacidity does *not* occur because the intrinsic gastric and intestinal factors that are important in the secretion of the gastric juice are *not* eliminated. It is for this reason that this writer doubts that this operation will ever supplant a carefully performed subtotal gastrectomy in the treatment of duodenal ulcer; and, of course, it probably has little place in gastric ulceration because of the potentiality of malignancy.

Diagnostic Posterior Colpotomy A. Decker has had favorable results in a large series of cases in which he performed puncture of the cul-de-sac (posterior colpotomy), most often for endoscopic visualization of the pelvis. He considers this procedure very safe (as well as valuable) if the patient is in the knee-chest position at the time of puncture and visualization. In skilled hands, the method has much for its recommendation.

Pulmonary Embolism Patients with pulmonary embolism should be treated by bilateral ligation of the common femoral vein at a point that is *distal* to its junction with the saphenous vein (to prevent persistent lymphedema of the extremity), but is proximal to the site of origin of its profunda branch. Anticoagulants also are used, and this combined therapy should make further embulation impossible. Some authorities depend upon the anticoagulants alone but should another pulmonary embolism occur, it might be fatal. For these reasons, it has been the routine at the Massachusetts General Hospital to prevent fatal pulmonary embolism by bilateral femoral ligations.

Plasma Cell Mastitis When examination of the frozen section of a biopsy from a breast tumor shows plasma cell mastitis, then a simple (*not* a radical) mastectomy should be done, as these are, theoretically, benign cases. They should be followed carefully for many years because eventually some of them develop malignant lesions in their breasts. When this occurs, the lesion is apt to be a malignant plasmacytoma or an epithelial growth of the comedocarcinoma type.

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FEBRUARY 1948

Medicolegal Notes

A "Groundless" Suit Must Allege "Bodily Injuries Caused by Accident" as Insured Against

An insurance policy was issued indemnifying the operator of a summer camp for boys for "bodily injuries caused by accident" and required the insurance company to defend all suits against the insured, even though such suits should be "groundless". An action was brought against the insured charging him with negligence in permitting the plaintiff's sons to remain in the camp with the knowledge that other boys there had contracted infantile paralysis.

This action, the Federal District Court for Southern New York holds, was not within the coverage of the policy, so as to require the insurance company to defend it. The insurance company could not be held liable for the expenses of defending that action on the ground that it was a "groundless" one within the contemplation of the policy. Howard vs. Massachusetts Bonding and Ins. Co., 69 F. Supp. 248. The defendant was held entitled to a directed verdict.

The court added that the action against the insured would have been a groundless suit within the policy had the plaintiffs alleged "that the two boys had contracted infantile paralysis as the result of bodily injury suffered in an accident in which they were involved (even though, so far as human intelligence is now informed, the outbreak of the disease could not have been so caused)—such a claim would indeed have been 'groundless'."

New York Law as to Recovery for Nervousness

It has long been the settled law of the State of New York that there can be no recovery for nervousness or mental anguish where there is no accompanying physical contact or injury.

In Mitchell vs. Rochester R. R. Co., (1896) 151 N. Y. 107, 110, the New York Court of Appeals held that "no recovery can be had for injuries sustained by fright occasioned by the negligence of another, where there is no immediate personal injury." And in Comstock vs. Wilson (1931) 257 N. Y. 231, 235, the same court said: In the Mitchell case and in Spade vs. Lynn and Boston R. R. Co., 172 Mass. 488, the New York and Massachusetts courts decided "that for no practical reasons there is ordinarily no duty to exercise care to avoid causing mental disturbance, and no legal right to mental security.

Serious consequences from mere mental disturbance unaccompanied by physical shock could be anticipated, and no person is bound to be alert to avert a danger that foresight does not disclose. The conclusion is fortified by the practical consideration that where there has been no physical contact there is danger that fictitious claims may be fabricated.

Therefore, where no wrong was claimed other than a mental disturbance, the courts refused to sanction a recovery for the consequences of that disturbance. Here there was more. The defendant should have foreseen that a collision with the car in which plaintiff's testatrix was a passenger could cause injury to the passengers. She did collide with the car through lack of care, and she did cause injury to the plaintiff's testatrix. That injury was not confined to fright. The fright was only a link in the chain of causation between collision and fractured skull. The collision itself, the consequent jar to the passengers in the car, was a battery and an invasion of their legal rights. Their cause of action is complete when they suffered consequent damages.

" . . . We do not say that in all cases the courts will hold a defendant liable for remote physical injuries resulting from nervous shock. Here the physical injuries are not remote, either in time or space. They were almost immediate and the evident result of the defendant's lack of care. No slight physical injuries in addition to those resulting from the shock would fortify the plaintiff's claim." Whether the fractured skull was the proximate result of the shock was held to be, in that case, a question for the jury.

In the Comstock vs. Wilson case, the plaintiff's testatrix, after the collision between the two cars, stepped from the car in which she was riding, fainted and fell to the sidewalk, fracturing her skull. It was held that a request by the defendant to charge that "if the jury find that if the deceased at the time

of the collision sustained only shock or fright, without physical injury, they must find for the defendant," was properly refused.

Both these leading cases were discussed and followed in Edward vs. American Hawaiian S. S. Co., 187 Misc. 723, 65 N. Y. S. 2d, 433, decided October 14, 1946, which was an action under the Jones Act by a seaman. It was there alleged that the plaintiff, while employed as a cook and baker aboard a certain vessel, was "mistreated" by the officers and was threatened with bodily harm, causing him great mental anguish, as a result of which the plaintiff alleged that he suffered a severe phychoneurosis, for which he claimed damages of $15,000.

Special Term of the Supreme Court, after stating the prior law as above, concluded: "The principle declared in Mitchell vs. Rochester R. R. Co. has been followed in many subsequent cases. But it has also been criticized by eminent textbook writers as well as by courts in other jurisdictions. The decision, however, still remains the law of this state.

"The fact that this cause of action is brought under the Jones Act does not change the rules applying to actions based upon alleged negligence. The argument that the word 'mistreated' imports physical contact cannot be accepted. If plaintiff intends to allege such contact, he should do so in the complaint, and not depend upon a conclusory term such as the word 'mistreated'." The defendant's motion to dismiss the complaint was therefore granted, with leave to the plaintiff to serve an amended complaint.

"Due Proof of Death" as Required by a Life Policy

Unless a life policy specifically provides otherwise, the term "due proof of death" as used therein does not require, the Nebraska Supreme Court holds, that any particular form of proof be made which the insurer might arbitrarily demand, but such a statement of facts as, if established in court, would require payment of the claim or some portion thereof. O'Neil vs. Union National Life Insurance Co., 27 N. W. 2d 837.

"If the administratrix", the court said, "can establish the facts set forth in her letter to the company, a prima facie case would be made. Consequently the facts recited in the letter constitute a sufficient proof of death within the provisions of the policy before us. This being true, the furnishing of proof of death as a condition to the precedent of bringing suit has been met." Judgment in an action on a life policy dismissing the action was therefore reserved and the case remanded for further proceedings. Two judges dissented, with opinions.

* * *

In 1891 Thomas Dixon Savill published a monograph on Dermatitis exfoliativa epidemica, or *Savill's disease*. Savill was a distinguished student in England and at Paris, Vienna and Hamburg. He was an executive of marked ability in all Poor Law Commissions. Savill, born in 1856, died at Algiers in 1910 following a fracture at the base of the skull, caused by a fall from a horse.

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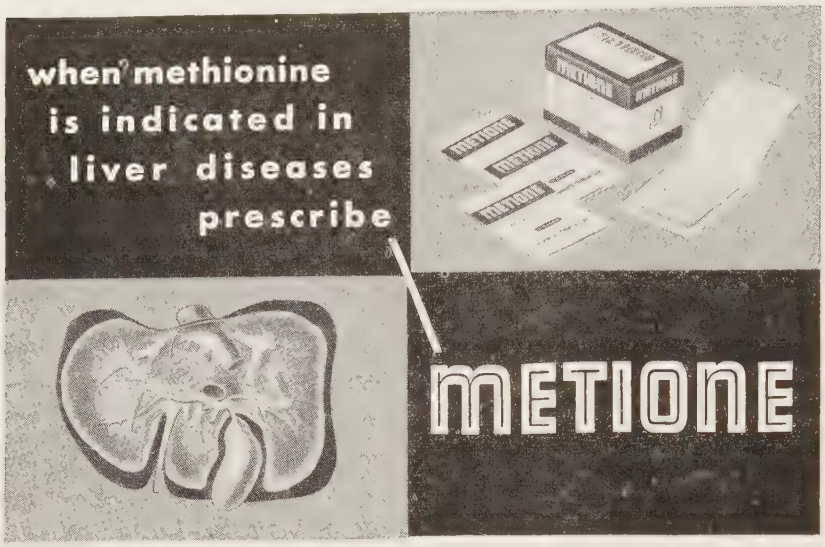

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Dosage: The average adult dose is one packet of METIONE (2 grams) dissolved in a small amount of hot water, three times daily after meals. For children, one-half the contents of a packet three times daily. In acute cases of liver damage due to chloroform, carbon tetrachloride and other hepatoxic agents, larger doses up to 10 grams daily have been recommended for short periods. A high protein, high carbohydrate and low fat diet is recommended in conjunction with METIONE administration.

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Evaporated Milk Accepted as Drink for Children

In a study, reported in the November 1947 issue of the *Journal of the American Dietetic Association,* it was revealed that school children readily drank reconstituted evaporated milk in a food acceptance study by Martha E. Hollinger and Cornelia P. Staples of Louisiana State University.

The milk drinking study was made in seven consolidated schools in Louisiana in the spring of 1947. In these schools, as in many other schools throughout the country, bottled pasteurized milk was not available and in most cases the children had not been receiving milk with their school lunches.

The evaporated milk was diluted one to one with cold water, and was well chilled in the lunchroom refrigerator before being served to approximately 1575 children daily with their noon lunch over a four-week period. While good acceptance was noted in all grades, the percentage of children drinking one full cup of milk with their lunch was somewhat higher in grades 1 to 3. However, a most important factor in the acceptance of the milk in all grades from 1 through 12 was the attitude of the teachers and the school principal. In one school where acceptance was especially good, principal and teachers were enthusiastic about the milk drinking program. The teachers dined in the lunchroom with the children, and by their own example encouraged them to drink

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the milk. In classrooms, the children learned about evaporated milk and the need for milk in the diet.

In some schools the presence of a store near the school where the children could buy sweets was noted as a factor damaging to the whole school lunch program affecting the acceptance of other protective foods in addition to milk. Hollinger and Staples observed, "A hungry child with no opportunity for food other than the simple, wholesome food provided by the school lunch program is the most receptive to unfamiliar food."

Sir Wilson Jameson Addresses APHA Meeting

Sir Wilson Jameson, chief medical officer of the British Ministry of Health, spoke on "The Place of Nutrition in a Public Health Program," at the first general session of the American Public Health Association.

He discussed the plan carried on in Britain during the war for proper and equitable distribution of food supplies, with an attendant decline in the incidence of anemia of women and children, in maternal mortality, stillbirth rates, infant mortality, and neonatal mortality. There was an accompanying gain in height and weight of children four to fourteen years of age and in freedom from dental caries in children.

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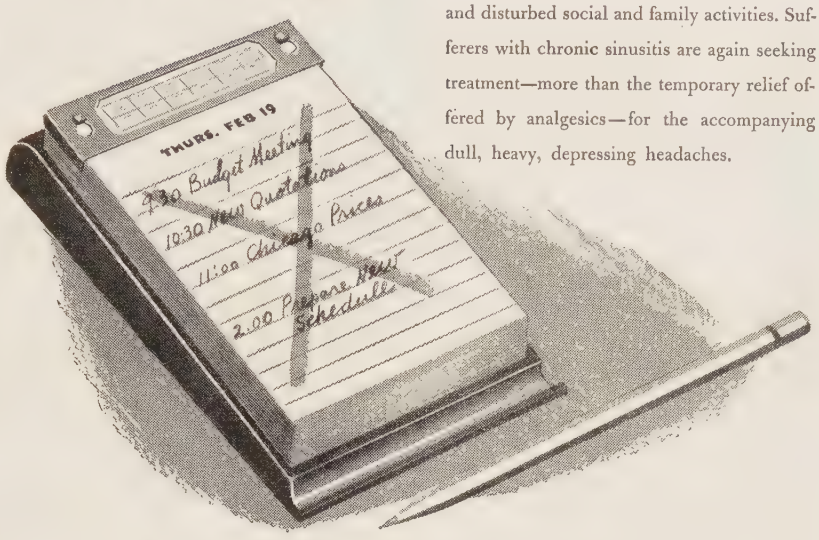

Cold, wet, wintry weather is again playing havoc with victims of chronic sinusitis. The cold blasts of winter take their toll in empty office desks, cancelled business appointments, and disturbed social and family activities. Sufferers with chronic sinusitis are again seeking treatment—more than the temporary relief offered by analgesics—for the accompanying dull, heavy, depressing headaches.

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DPS Formula 80 (Chlorophyll Liquid)—a highly concentrated, purified chlorophyll in a physiologic saline solution—has been designed for the treatment of sinusitis, rhinitis, and allied conditions. Clinical studies of 1200 patients* with infections ranging in severity from mild acute coryza or rhinitis to associated sinus infection and chronic rhinosinusitis, have shown that there was "not a single recorded case in which either improvement or cure did not take place" when chlorophyll therapy was used.

**Gruskin, B.: Am. J. Surg. 49:49 July 1940.*

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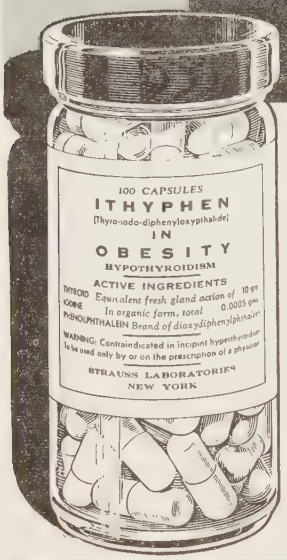

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Sugar Foundation Experiments On Tooth Decay Inhibitor

A battery of tests are currently being employed to determine whether certain chemicals added to sugar will retard the production of acid in the mouths of animals, according to Dr. Robert C. Hockett, scientific director of Sugar Research Foundation, N. Y. A special standardized colony of cotton rats at Harvard School of Dental Medicine, Cambridge, are being used. Results are expected by May.

In test tube experiments, published by Dr. Leonard S. Fosdick, Northwestern Dental School, Chicago, glyceric aldehyde, a rare sugar, markedly inhibited the fermentation of common sugar by bacteria normally present in the mouth.

The Harvard rat colony, which has been maintained for some years by Dr. James H. Shaw to determine the relationship between various dietary elements and tooth decay, will tell whether the inhibitor works under conditions in the animal mouth. Dr. Shaw recently indicated that preliminary tests in which raw sugar was substituted for refined had no effect.

It is highly probable that several other substances which Dr. Fosdick found had some inhibitory action will be tried out in turn to see if they work as well in the mouth as in the test tube. There is reason to believe that if they work in the case of rats, they will be effective in the human mouth.

However, the addition of such a substance to sugar, Dr. Hockett said, would not entirely stop tooth decay. Even if the action of mouth acid on teeth is a cardinal factor in decay, the rate of acid production from such different carbohydrates as potatoes, flour, dark bread, honey and sugar has been observed to be almost identical. The problem of incorporating such an inhibitor with other carbohydrate foods would be more formidable than adding it to sugar.

Dr. Hockett also declared that many careful tests would be necessary before even small amounts of an inhibitor could be used. The possible effects of a glyceric aldehyde-sugar mixture on other ingredients in commercial baking, ice cream manufacture, canning and frozen fruit preservation, and other applications where a pure uniform sugar is demanded, would have to be observed.

Past experimentation clearly illustrates that the search for an inhibitory chemical has been going on for a number of years. Ammonia compounds and vitamin K show some promise, although the addition of minute quantities of sodium fluoride to the drinking water has achieved some application. Dr. Fosdick obtained a small vial of the substance made before the war in Europe. The remainder of the lot was made available by Dr. Fischer to the Sugar Research Foundation as part of the program to discover uses for some of the 10,000 close chemical relatives and derivatives of common sugar.

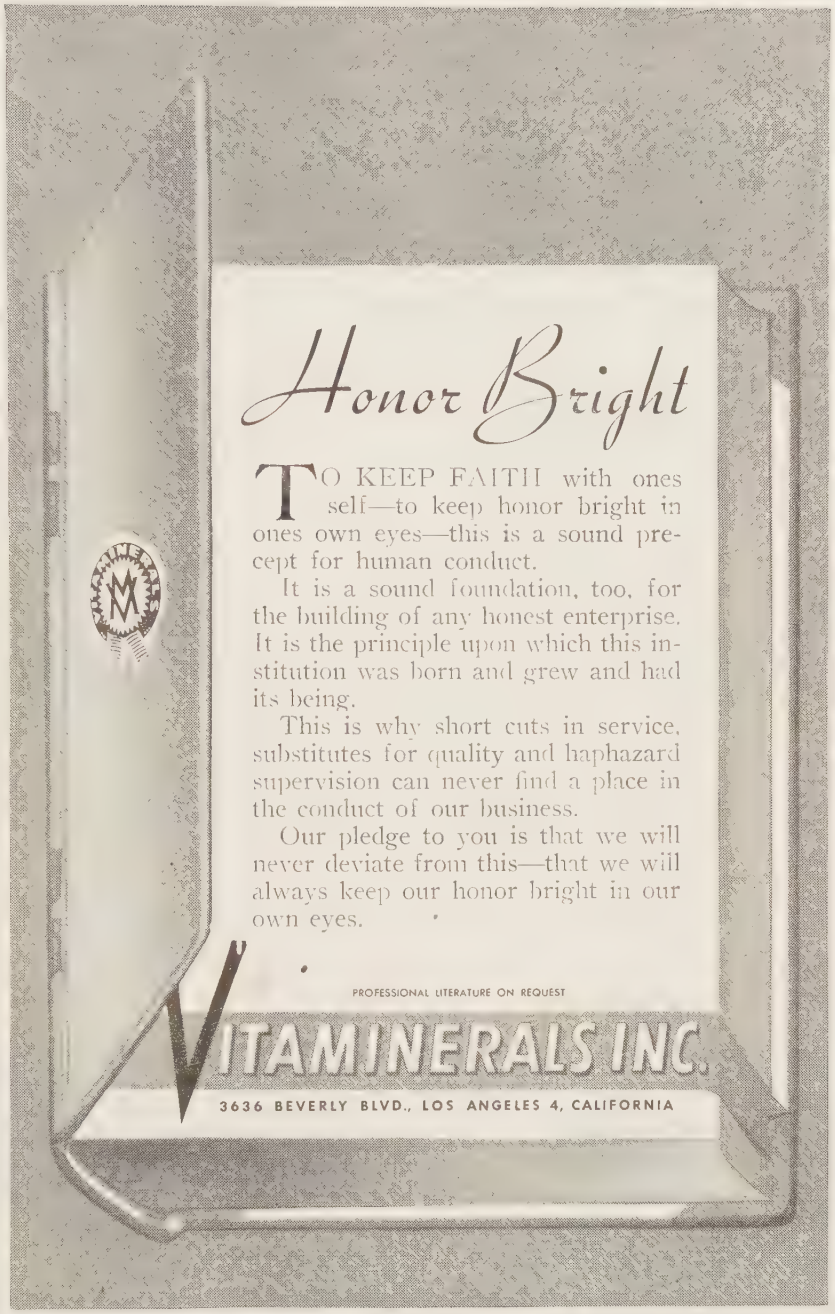
ANA Assails Fishbein's Nurse Replacement Plan

Dr. Morris Fishbein's possible suggestion to alleviate the nursing shortage was that practical nurses should be able to take over the major part of bedside nursing as previously was done by registered professional nurses. This proposal met with strong disapproval by Ella Best of the American Nurses' Association, as being "detrimental and dangerous" to a patient's health.

The doctor's views which appeared in a recent issue of *Hygeia*, were answered with a telegram from the ANA headquarters, N. Y., which said, "May we respectfully suggest that the solution of the nursing crisis does not lie in the training of more practical nurses to take over the major part of bedside nursing in hospitals, as you were quoted by the Associated Press with a Chicago dateline as saying in *Hygeia*. We recognize that practical nurses fulfill a needed function but not this one.

" . . . In time of critical shortage of doctors it was not suggested that first aid technicians be substituted in their place. The same parallel exists between practical and professional nurses.

" . . . The American Nurses' Association holds that the crisis in nursing will be overcome only when the profession is made sufficiently desirable to attract and retain a sufficient number on a basis of its professional status and economic stability. This rather than lowering the standards of nursing seems to be indicated in the public interest," Miss Best concluded.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"Industrial Alcoholic" Catered To At March Conference

More than 300 firms are sending representatives to attend the first Industrial Conference on Alcoholism, March 23, in Chicago, according to Karl Fischer, vice president.

Oil companies, utilities, electrical firms, banks, department stores, steel firms, railroads, large and small manufacturing outlets, labor organizations, and many other firms are taking part.

Sponsored by the Chicago Committee on Alcoholism, the one-day conference is designed to bring to industry facts regarding the problem of alcoholic employes and to discuss ways and means of alleviating and preventing the problem.

"Alcoholic employes," Fischer said, "now cost industry well in excess of one billion dollars per year in lost man power, and most companies are powerless to cope with the problem. One item of information which will be made clear at this conference is that alcoholics are sick people."

Mr. Fischer went on to say that since it is estimated that three percent of the adult population suffer from the disease of alcoholism, no organization is without its alcoholic employes.

Dr. Robert Seliger, Baltimore, Md., who will address the conference has pointed out that no one who has had an alcohol problem can ever drink again *socially*. Science does not yet know exactly what change has taken place in cell tissue or the spinal fluid resistance to the toxin—but pragmatic experience has proved beyond doubt that once a person's drinking has crossed the line into pathological drinking, he or she can never *handle alcohol* again.

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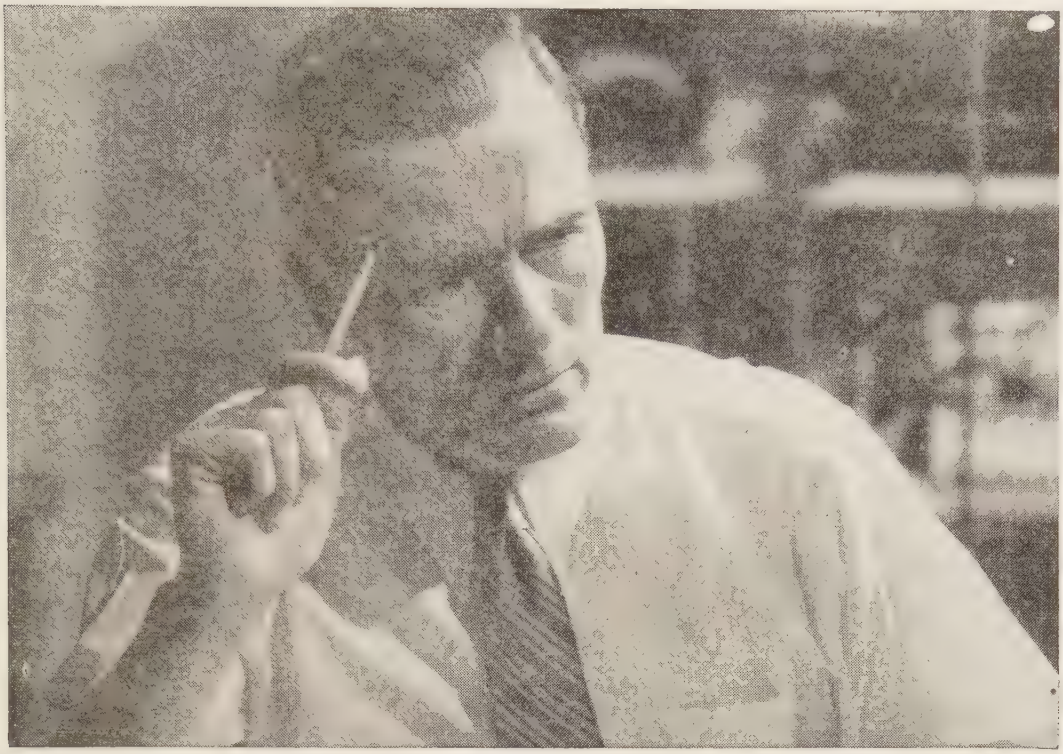

When does a man start slipping?

The moment comes to every man.

The moment when he realizes that he isn't the man he used to be . . .

That the days of his peak earning power are over . . .

That some day not so very far away some younger man will step into his shoes.

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NEW PRODUCTS

Anti-Rh Serum Offered by Ortho

Ortho Pharmaceutical Corporation, Raritan, N. J., has announced Dr. Philip Levine's development of a highly accurate diagnostic anti-Rh serum, which has been derived from human blood.

Dr. Levine, noted for his pioneer work in the discovery of the cause of erythroblastosis fetalis, is director of the biological division of the Ortho Research Foundation, where he conducts an Rh blood testing laboratory.

Ortho's Anti-Rh serum is derived from selected Rh negative mothers who have borne infants with erythroblastosis fetalis and whose blood has developed Rh agglutinins. It is necessarily in very limited supply, since the incidence of erythroblastosis in all matings is only 1:200 full term pregnancies.

Because there is a growing awareness of the danger existing for the Rh negative person, whose blood has developed antibodies because a transfusion or muscular injection of Rh positive blood has been administered or minute amounts of Rh positive fetal blood has been received through pregnancy, physicians now know that a further infusion of Rh positive blood may have fatal consequences to the immunized Rh negative individual.

Reports of erythroblastotic babies who have been saved so spectacularly by replacing their Rh positive blood with Rh negative blood gives the public much confidence in this research.

Micropellets Progynon Introduced by Schering

In answer to many requests for an aqueous estrogen, Schering Corporation, Bloomfield, N. J., has introduced Micropellets Progynon, which is made up of pure micro crystals of alpha estradiol, and when suspended in normal saline solution provides an immediate and prolonged effect upon intramuscular injection.

In this product the water is absorbed and the Micropellets remain in the tissue with all the advantages of a pellet implantation. It is reported that freedom from the pain of injection, which is an objection to other suspensions of large crystals or bulky amorphous masses, is assured when these tiny crystals are used.

X-Ray Simplification Forwarded by Westinghouse

Westinghouse engineers have devised a completely redesigned version of the so called four-in-one spot film device, typifying the general trend in x-ray simplification. The complete apparatus on which this device is used consists of a table on which the patient lies, and a fluoroscopic screen that can be moved above the patient's body. This enables the radiologist to observe any portion to be examined.

Although this four-in-one feature which enables the operator to take four small pictures in succession on one film or two halfsize, or one large picture using the whole negative, is not new, for the first time this type of machine uses a full size standard fluoroscope screen (12 by 16). Also it is interesting to note, that all four exposures are made right side up which facilitates their study if they happen to be close sequence pictures of some organ action.

A new family of x-ray machine controls is aimed to simplify operation. The simplest, the Rayflex, provides in a single x-ray control the ability to operate on a variety of power conditions, either 110- or 220-volt, 50- or 60-cycle input, or on a current range from 15 to 30 milli-amperes. It provides 11 steps of x-ray penetration, more than previously obtainable with low-cost controls.

The second member of the control group is one termed Simplex. It provides control for tubes up to 50 ma, gives preset values of filament current, and is extremely accessible for servicing.

The Autoflex provides for the specialist or the medium-sized hospital a fully automatic control that assures delivery, time after time, of preset quantities of kilo-voltage and current. Electronic controls provide precise settings. The Autoflex embodies an automatic exposure timer, an instrument that integrates current and length of exposure. It provides control for two tubes so that the radiologist can view the patient on the fluoroscope and then, without changing any adjustment, take a properly exposed picture.

Mercodol—New Feature of Merrell Company

Mercodol, a physiologically balanced cough syrup featuring the new, improved narcotic, mercodinone, has recently been announced by Wm. S. Merrell Co., Cincinnati. Chemically related to codeine, yet six times as potent by weight, mercodinone is notably free from the undesirable effects of the older drug.

This product is for the relief of cough in acute catarrhal bronchitis, acute tracheobronchitis, allergic bronchitis, laryngitis and for simple coughs due to colds. The dosage required for adults is one teaspoonful every three hours. For children the requirement is one-quarter teaspoonful to one teaspoonful, according to age, every three hours.

Sulfonamide Therapy Advanced by Schering

A new form of sulfa treatment introduces itself in Schering's preparation consisting of three sulfonamides—sulfadiazine, sulfathiazole, and sulfamerazine which have been incorporated into a tablet or into a liquid suspension, in equal parts.

Dr. David Lehr, New York Medical College, who carried on this research under a Schering grant,

found that the concentration or solubility of one sulfonamide in a solution does not affect and is not affected by the amount of another sulfonamide in the same solution. This experimented principle has been found to hold true if there are three sulfonamides present. Thus only one-third of the usual whole dosage of each sulfonamide need be given to obtain a potentiated therapeutic effect.

The probability of crystalluria now is also extremely remote. Combination of sulfonamides has proven more effective, in shorter periods of time, with smaller dosage.

Germ-Free Pillow Manufactured by California Company

Lume-O-Glass Company, 640 S. Broadway, Los Angeles, has just placed on the market its new Zephyrest pillow, which reportedly does not harbor dust or germs and is completely allergy-free.

The downy, inorganic fibres used in its construction will not absorb perspiration or retain odors and offers no sustenance for mildew, mold or bacterial growth.

This pillow can be cleaned by one immersion because any soil or foreign material is solely surface structure. It remains resilient indefinitely and is non-combustible.

Even Heat Cutter on Eberbach's New Products List

The new Even Heat Glass Tubing Cutter, Eberbach and Son Co., Ann Arbor, Mich., has cutter glass tubing up to 7½ inches outside diameter and can be cut in any position, as a separate piece or as an integral part of apparatus already set up.

Adjustable supports are provided for the hot wire cutting unit and for the tubing when individual pieces are to be cut. However this unit can be used in any position when detached from its support, and a foot switch is available as an accessory for controlling the power when the operator wants to have both hands free for the cutting operation.

Among the important features of the Even Heat Glass Tubing Cutter is elimination of electrical shock hazard. The hot cutting wire carries low voltage which is isolated and insulated from the power line.

Practical Production of Cytochrome C Developed by Wyeth Institute

An improved process for producing the respiratory catalyst, Cytochrome C, in a form suitable for intravenous administration has just been announced by the Wyeth Incorporated, Philadelphia. As a result Wyeth is now able to make this product available to physicians in amounts approaching the demand.

While not a cure for any disease, Cytochrome C is reported to be of benefit in many conditions in which an inadequate oxygen supply to the tissues plays a major part. The product is reported to have given interesting results in the relief of such serious disease syndromes as coronary thrombosis, intermittent claudication and amyotrophic lateral sclerosis.

Carried in loosely combined form by hemoglobin to the network of capillaries that serve the tissues, oxygen can be transmitted to the tissues only through the medium of an enzyme system composed of Cytochrome C and the specific oxidizing enzyme, cytochrome oxidase. This oxidase is always present in excess, and the proportion of Cytochrome C naturally present is never sufficient to activate all of the oxidizing enzyme. It is also a fact that, even in conditions of oxygen hunger, not even the inadequate supply of oxygen is never wholly used up.

These findings led Dr. Samuel Proger, Boston, to the conclusion that, if additional Cytochrome C could be supplied to the tissues, it would be possible to encourage the more complete utilization of the arterial oxygen so that tissue needs could be more adequately met. Experiments with tissue suspensions and living animals and humans satisfied him that this hypothesis worked.

Specifically, Proger proved that when Cytochrome C is injected it builds up a concentration in the bloodstream from which it is released to the tissues whenever the tissues' oxygen needs require this catalyst. The brain, which is one of the first organs to react to local oxygen lack, recovers from anoxic (oxygen deficient) states when Cytochrome is injected by vein. This cerebral recovery has been demonstrated with the electroencephalograph.

In coronary thrombosis a blood clot impedes the

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transmission of arterial oxygen to the heart muscle, producing a state of anoxia which hinders the activity of the heart muscle. In a relatively small number of recorded cases intravenous Cytochrome C has been reported to be of demonstrable assistance in this condition.

In intermittent claudication, partial obstruction in the arteries of the leg interferes with the oxygenation of the leg muscles, producing pain upon exertion which is relieved by rest. Injection of Cytochrome C has, in a number of cases produced encouraging results.

The inexorable progressive paralysis caused by a mysterious hardening of the lateral columns of the spinal cord, known as amyotrophic lateral sclerosis, may, it is reported, in some way involve regional anoxia. At any rate, this disease which prematurely ended the life and the promising career of the baseball star Lou Gehrig, was reported to be significantly relieved in four cases described by Dr. Milhorat in one of the Cornell Conferences on Therapy. Now that Cytochrome C has become accessible to clinical investigators generally, it is likely that a more representative body of experience will develop.

The Wyeth Institute of Applied Biochemistry, which has developed the improved Cytochrome C process, is the research division of Wyeth Incorporated.

Sharp & Dohme Releases Tablets Chlorguanide Hydrochloride

Sharp & Dohme recently announced the national release of tablets Chlorguanide Hydrochloride.

A wartime development of British research, this product combats both exoerythrocytic and erythrocytic forms of malaria and according to many medical authorities, is the best antimalarial drug available.

Chlorguanide is relatively non-toxic and is useful in both prophylaxis and treatment.

The drug gives complete protection against malignant tertian malaria and has a partial causal prophylactic action against benign tertian malaria.

Attacks of benign or malignant tertian malaria are terminated effectively by chlorguanide, it is absorbed more rapidly and has a smaller minimal effective dose.

In comparison with other antimalarial drugs, there is a wider range between the minimal effective dose of chlorguanide.

Chlorguanide tablets are administered orally and should be accompanied by an ample intake of water, which tends to prevent nausea or vomiting that may occur on rare occasions.

Tablets Chlorguanide Hydrochloride, S. & D., 0.1 Gm., are supplied in bottles of 100 and 1000.

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Female	114.7	116.4	117.7	118.7	120.4	123.6	127.1	129.8	132.5	133.7	135.4
DIASTOLIC											
**Male	76.4	78.1	78.8	79.5	80.4	81.4	82.3	83.3	84.3	84.5	84.0
Female	75.8	77.1	78.0	78.6	79.9	81.9	83.9	85.4	86.8	86.8	84.4

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*Blood Pressure. Report of Joint Committee on Mortality of The Association of Life Insurance Medical Directors and The Actuarial Society of America. New York, 1925. pp. 10, 52.

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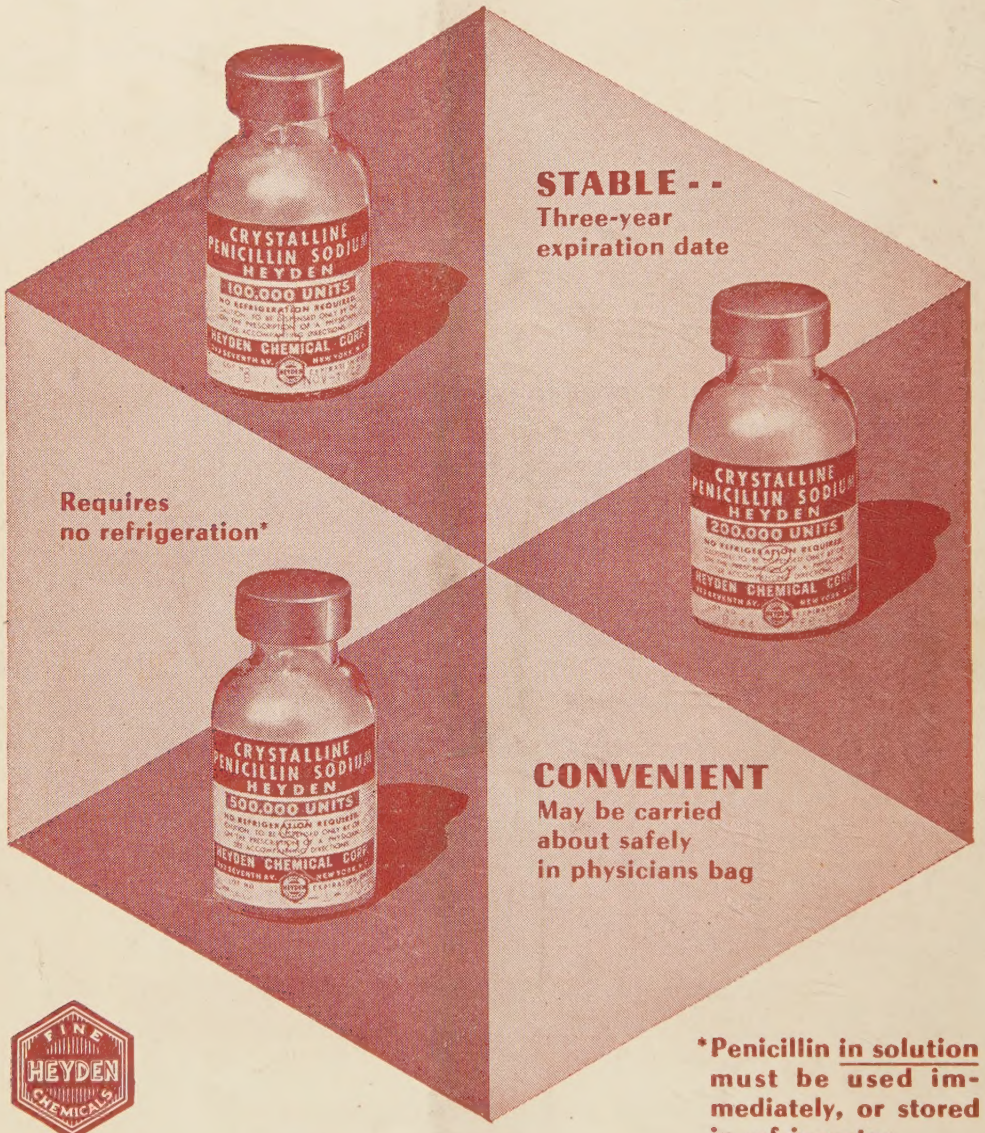

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